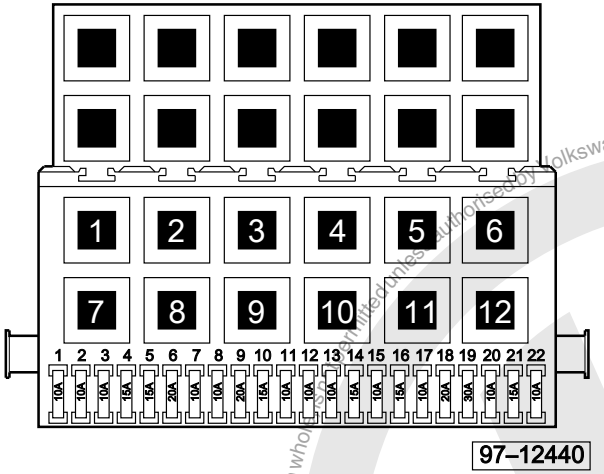
Polo - Base equipment

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



2 - Rear window wipe/wash relay (72)
4 - X contact relief relay (18)
6 - Hazard warning light relay (21)
8 - Automatic intermittent wash/wipe relay (19)
9 - Lights on warning buzzer (36)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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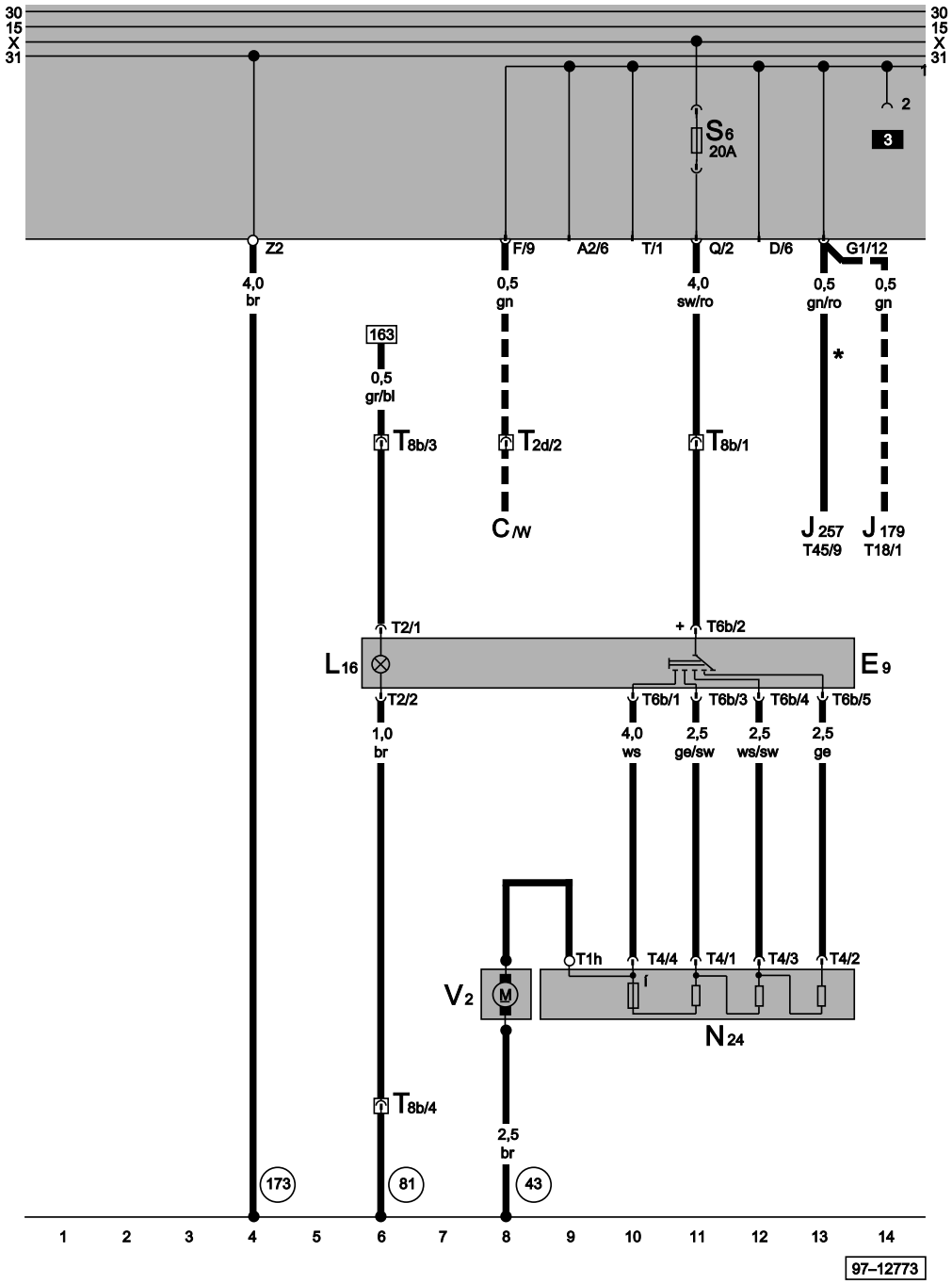

Fresh air blower, fresh air blower switch

C	Alternator
E9	Fresh air blower switch
J179	Automatic glow period control unit
J257	Mono-Motronic control unit, centre in plenum chamber
L16	Fresh air controls light bulb
N24	Fresh air blower with overheating fuse series resistor
T1h	Single connector, on fresh air blower series resistance
T2	2-pin connector, on fresh air blower switch
T2d	2-pin connector, on gearbox
T4	4-pin connector, on fresh air blower series resistance
T6b	6-pin connector, on fresh air blower switch
T8b	8-pin connector, left behind console
T18	18-pin connector, on automatic glow period control unit
T45	45-pin connector, on Mono-Motronic control unit
V2	Fresh air blower
43	Earth point, A-pillar, right lower
81	Earth connection -1-, in dash panel wiring harness
173	Earth connection -1-, in Mono- Motronic wiring harness
*	For engine code AEV, ADX and AEA only
---	For engine code AEF only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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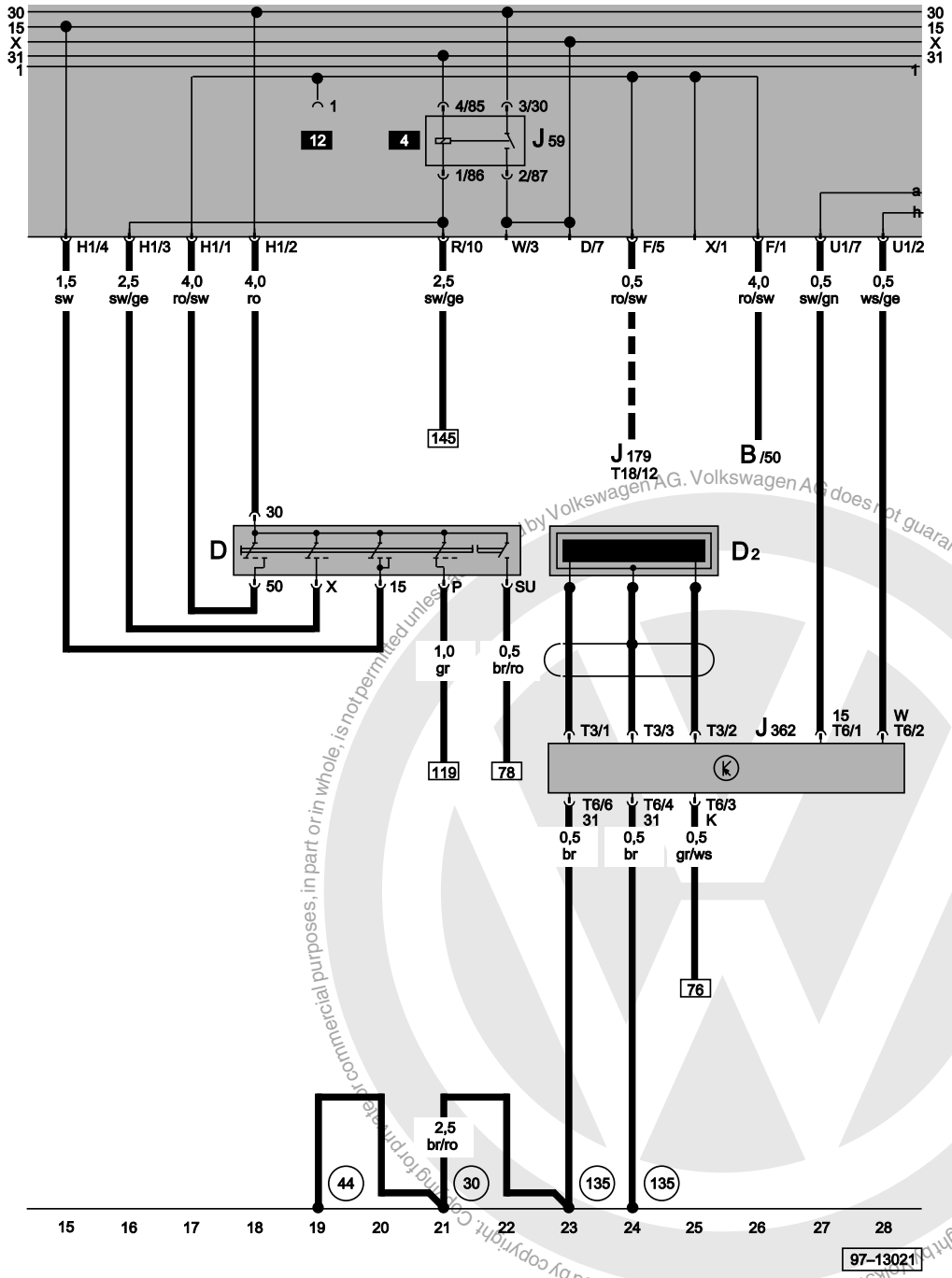

Ignition/starter switch, immobilizer

B	Starter
D	Ignition/starter switch
D2	Immobilizer reading coil
J59	X contact relief relay
J179	Automatic glow period control unit
J362	Immobilizer control unit, next to steering column
T3	3-pin connector, on immobilizer control unit
T6	6-pin connector, on immobilizer control unit
T18	18-pin connector, on automatic glow period control unit
30	Earth point -1-, next to relay plate
44	Earth point, A-pillar left, bottom
135	Earth connection -2-, in dash panel wiring harness
---	For engine code AEF only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
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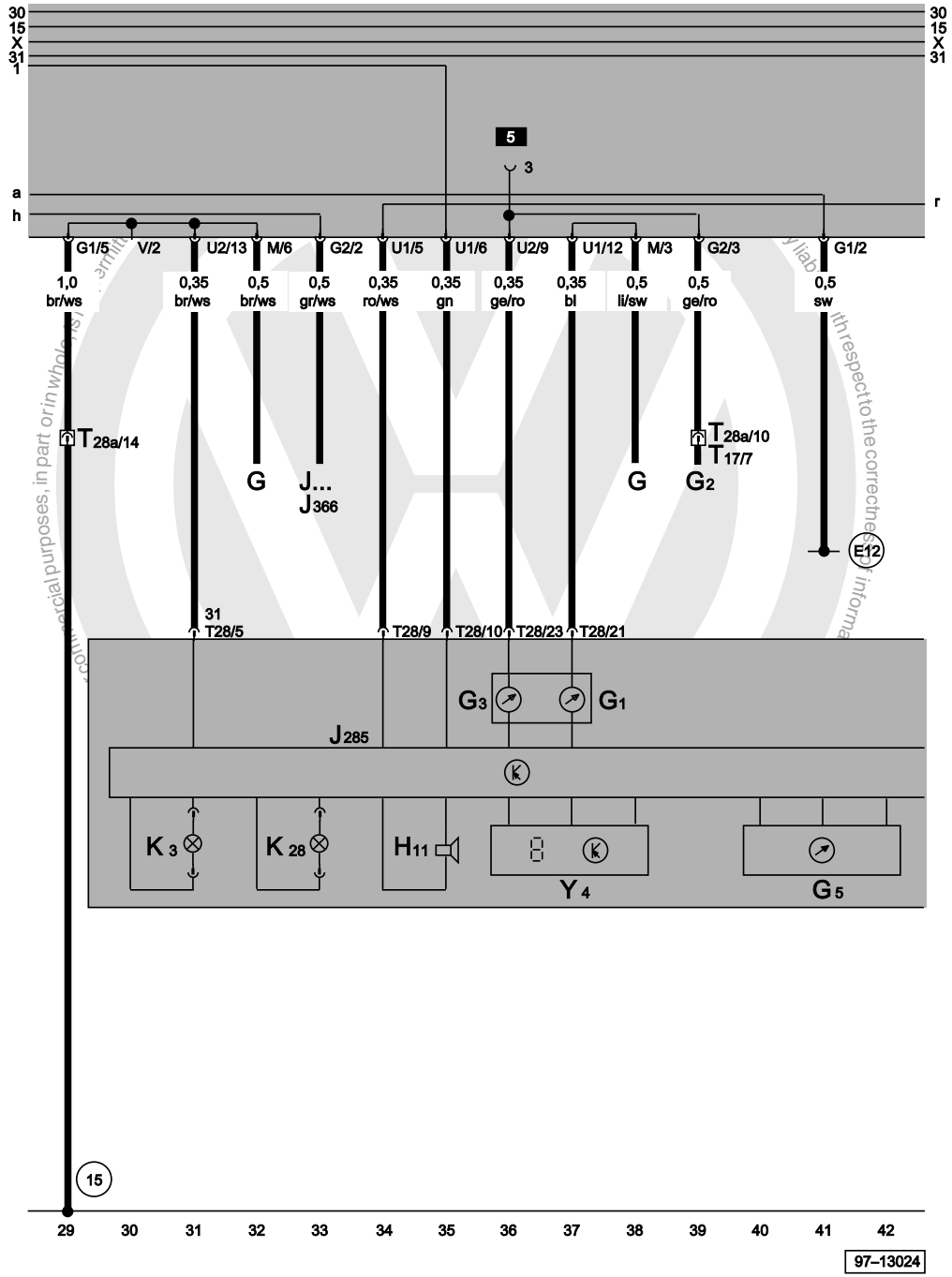

Dash panel insert, fuel gauge, coolant shortage and coolant temperature warning/gauge, optical and acoustic oil pressure warning, odometer display

G	Fuel gauge sender
G1	Fuel gauge
G2	Coolant temperature sender
G3	Coolant temperature gauge
G5	Rev. counter
H11	Oil pressure warning buzzer
J...	Engine control units, in plenum chamber
J285	Control unit with display in dash panel insert
J366	Fuel shut-off valve control unit (for engine code AEF only)
K3	Oil pressure warning lamp
K28	Coolant temperature/coolant shortage warning lamp
T17	17-pin connector, on engine (for engine code AEF only)
T28	28-pin connector, on dash panel insert
T28a	28-pin connector, on engine (for petrol engine only)
Y4	Odometer display
15	Earth point, on cylinder head
E12	Positive (+) connection -1- (15), in Mono-Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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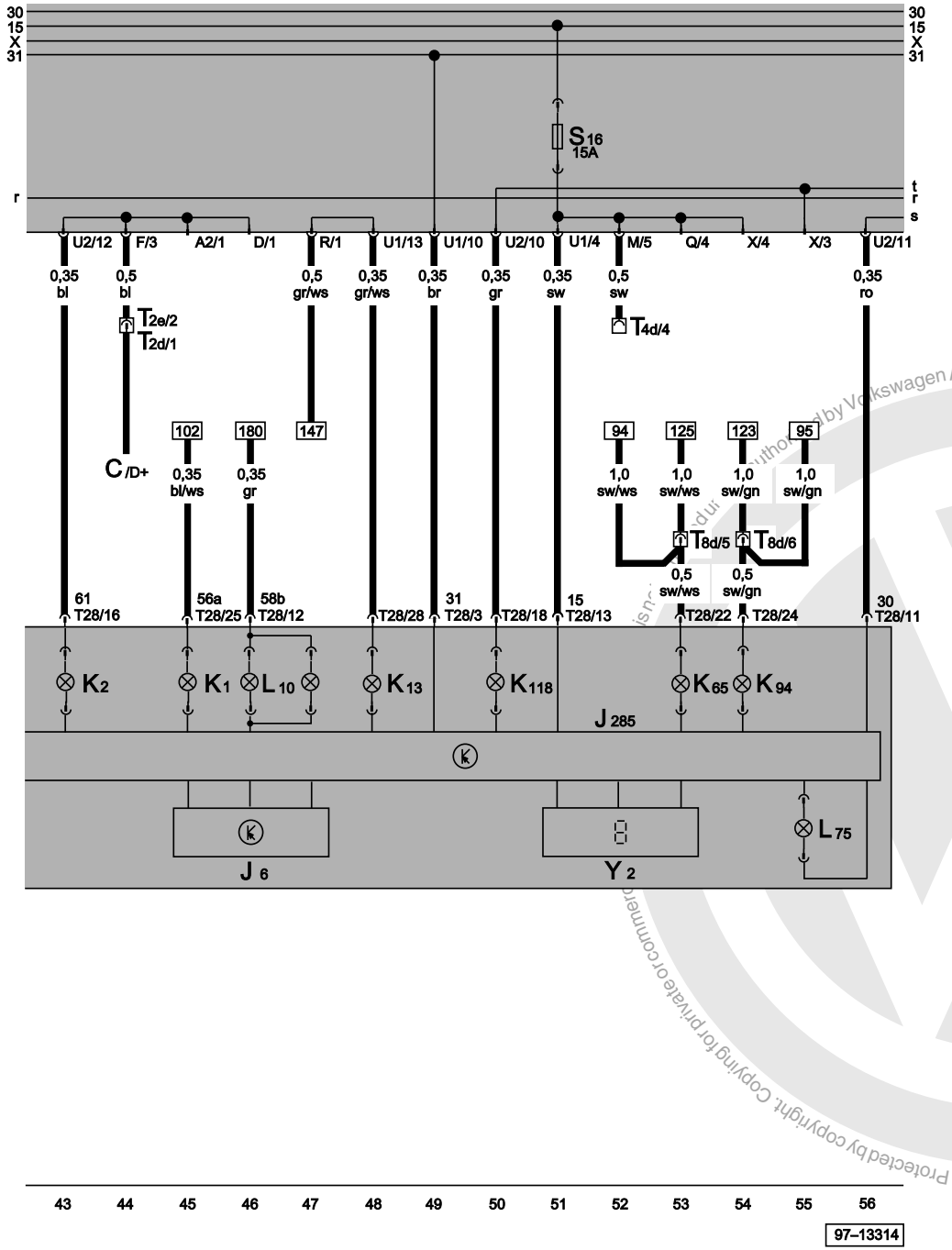

Dash panel insert, rev. counter, digital clock

C	Alternator
J6	Voltage stabilizer
J285	Control unit with display in dash panel insert
K1	Main beam warning lamp
K2	Alternator warning lamp
K13	Rear fog light warning lamp
K65	Left turn signal warning lamp
K94	Right turn signal warning lamp
K118	Brake system warning lamp
L10	Dash panel insert light bulb
L75	Digital display illumination
T2d	2-pin connector, on gearbox (for engine code AEF only)
T2e	2-pin connector, on gearbox (for petrol engine only)
T4d	4-pin connector, behind relay plate
T8d	8-pin connector, behind relay plate
T28	28-pin connector, on dash panel insert
Y2	Digital clock

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
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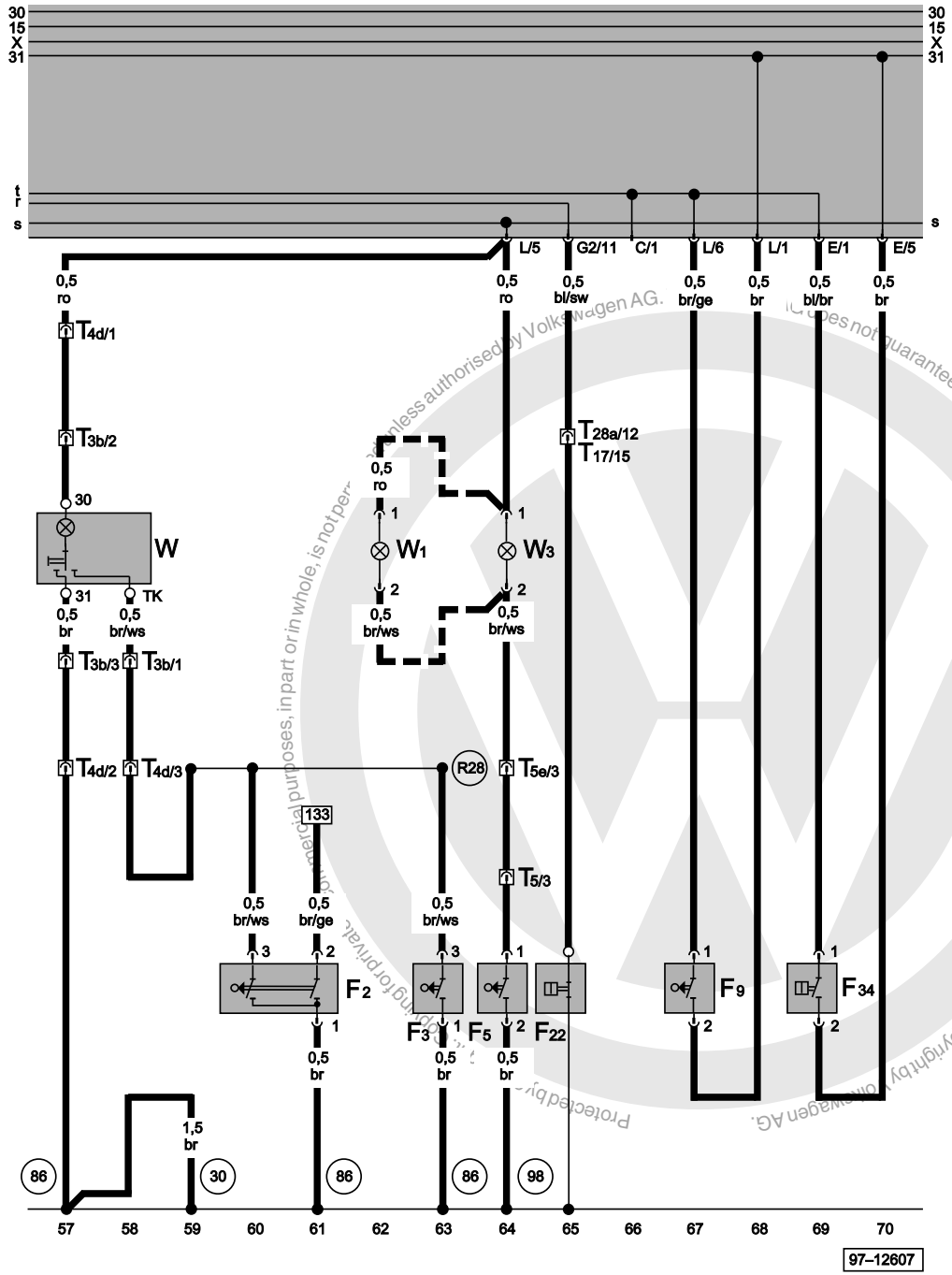

Interior light, luggage compartment light, handbrake warning switch and brake fluid level switch

F2	Door contact switch, driver side
F3	Door contact switch, front passenger's side
F5	Luggage compartment light switch
F9	Handbrake warning switch
F22	Oil pressure switch (0.3 bar)
F34	Brake fluid level warning contact
T3b	3-pin connector, near interior light
T4d	4-pin connector, behind relay plate
T5	5-pin connector, in tailgate/boot lid
T5e	5-pin connector, left behind C-pillar trim
T17	17-pin connector, on engine (for engine code AEF only)
T28a	28-pin connector, on engine (for petrol engine only)
W	Interior light, front
W1	Rear interior light/load area
W3	Luggage compartment light
30	Earth point -1-, next to relay plate
86	Earth connection -1-, in rear wiring harness
98	Earth connection, in tailgate/boot lid wiring harness
R28	Connection -2- (door contact switch), in rear wiring harness
---	For vehicles with load area light only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
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or	=	orange
rs	=	pink

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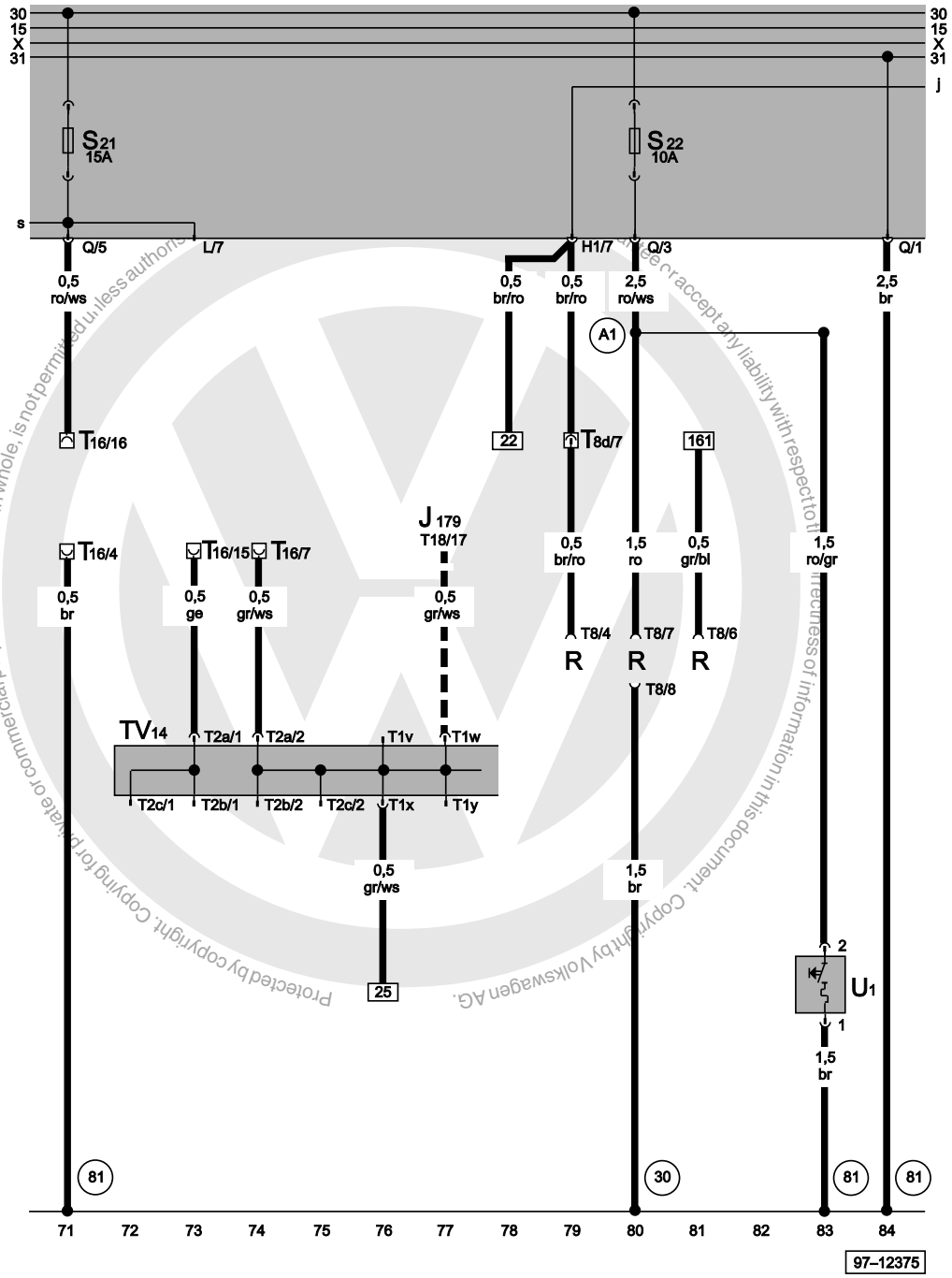

Junction box for self diagnosis, radio connection, cigarette lighter

J179	Automatic glow period control unit
R	Radio
T1v	Single connector
T1w	Single connector
T1x	Single connector
T1y	Single connector
T2a	2-pin connector
T2b	2-pin connector
T2c	2-pin connector
T8	8-pin connector, on radio
T8d	8-pin connector, behind the relay plate
T16	16-pin connector, behind shelf driver's side, -Self-diagnosis connection for V.A.G 1551 -
T18	18-pin connector, on automatic glow period control unit
TV14	Self-diagnosis junction box, above the relay plate
U1	Cigarette lighter
30	Earth point -1-, next to relay plate
81	Earth connection -1-, in dash panel wiring harness
A1	Positive (+) connection (30a), in dash panel wiring harness
---	For engine code AEF only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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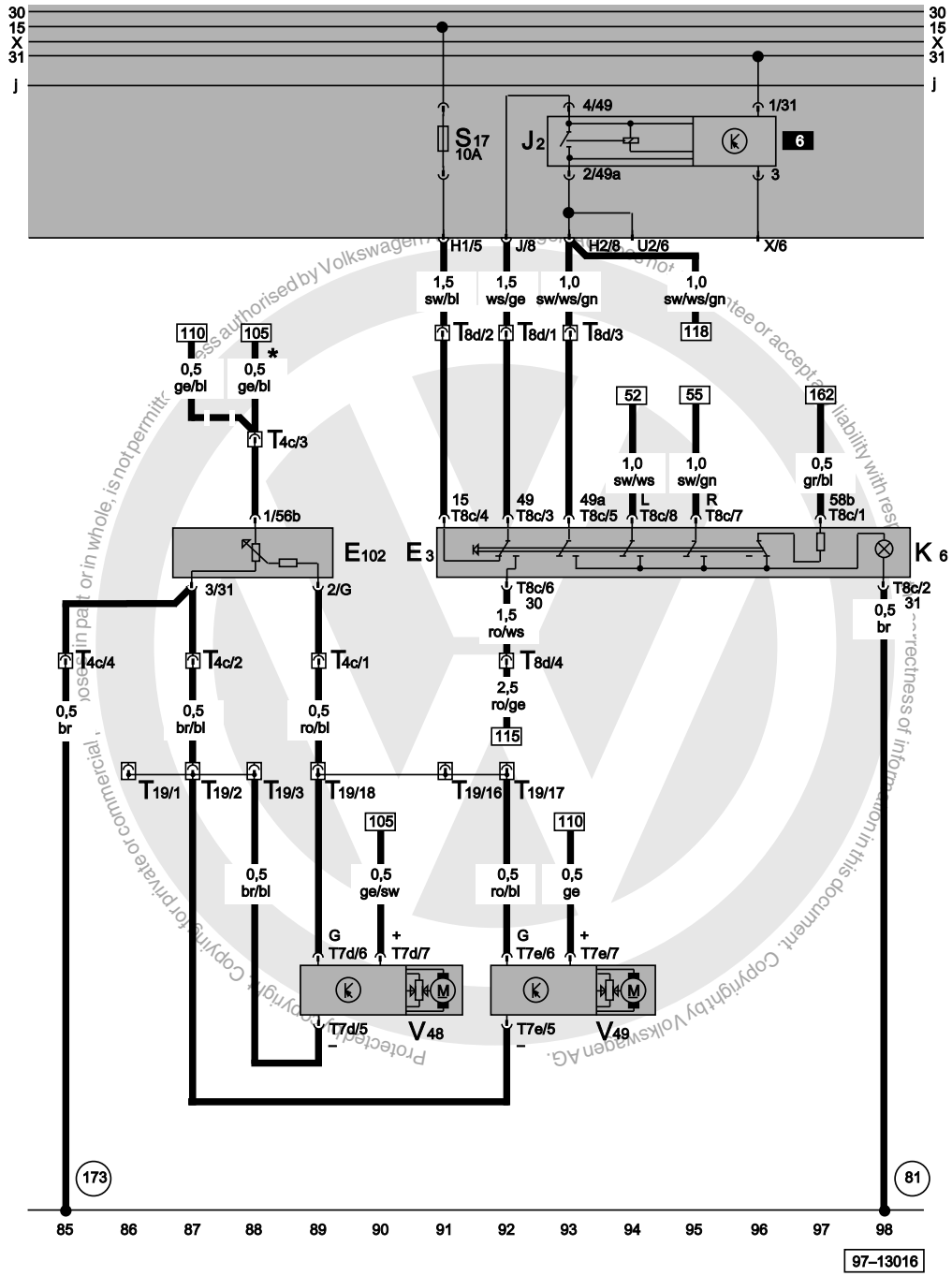

Headlight range control, hazard warning light system

E3	Hazard warning light switch
E102	Headlight range control adjuster
J2	Hazard warning light relay
K6	Hazard warning light system warning lamp
T4c	4-pin connector, behind the relay plate
T7d	7-pin connector, left behind headlights
T7e	7-pin connector, right behind headlights
T8c	8-pin connector, on hazard warning light switch
T8d	8-pin connector, behind the relay plate
T19	19-pin connector, left near radiator
V48	Headlight range control motor, left
V49	Headlight range control motor, right
81	Earth connection -1-, in dash panel wiring harness
173	Earth connection -1-, in Mono- Motronic wiring harness
*	For petrol engine only
---	For engine code AEF only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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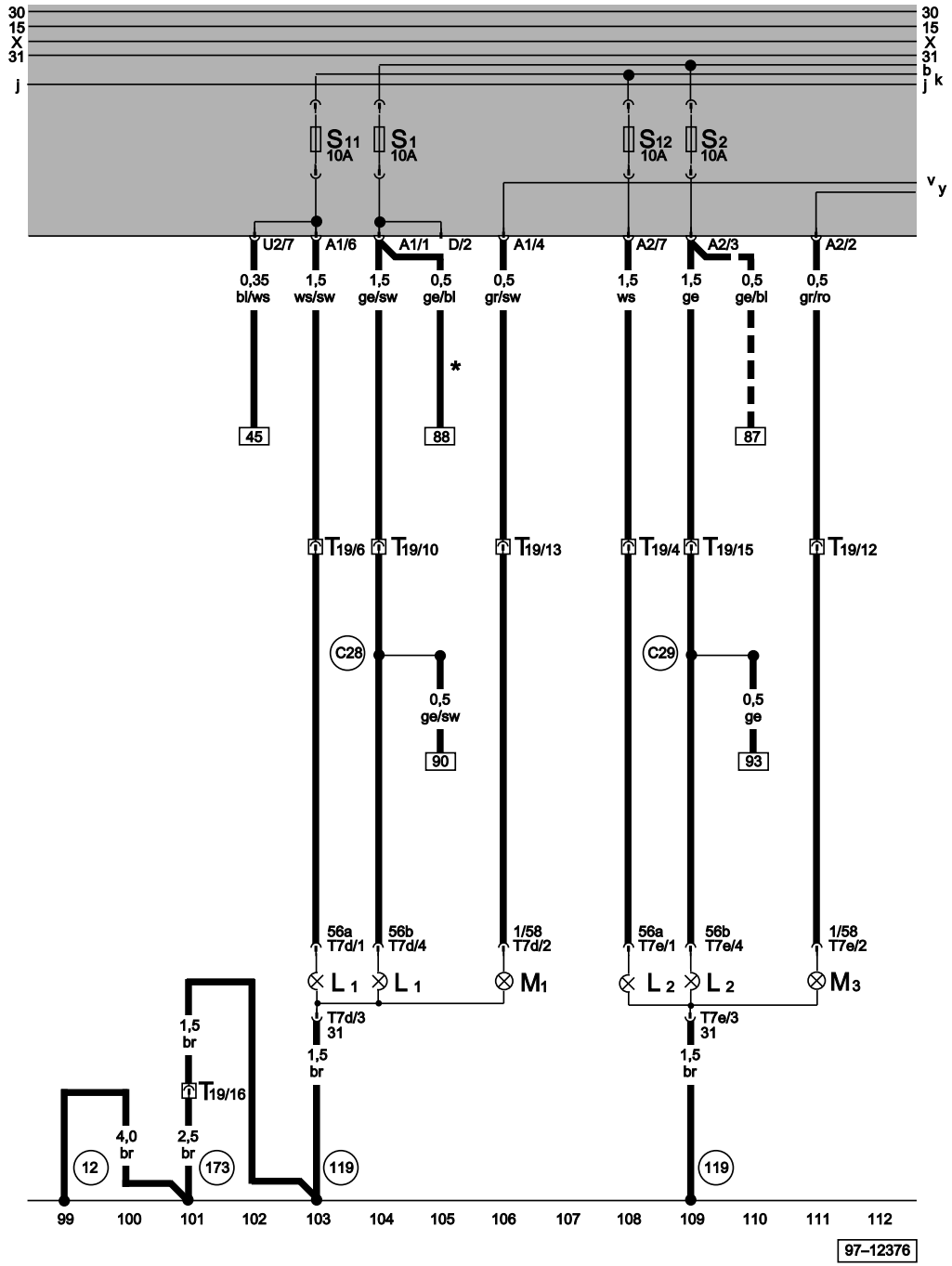

Headlights, side light

L1	Twin filament bulb/sealed beam insert, left
L2	Twin filament bulb/sealed beam insert, right
M1	Side light bulb, left
M3	Side light bulb, right
T7d	7-pin connector, left behind headlights
T7e	7-pin connector, right behind headlights
T19	19-pin connector, left near radiator
12	Earth point, left in engine compartment, under battery
119	Earth connection -1-, in headlight wiring harness
173	Earth connection -1-, in Mono- Motronic wiring harness
C28	Connection -1- (56b), in headlight wiring harness
C29	Connection -2- (56b), in headlight wiring harness
*	For petrol engine only
---	For engine code AEF only

ws	=	white
sw	=	black
ro	=	red
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gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
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or	=	orange
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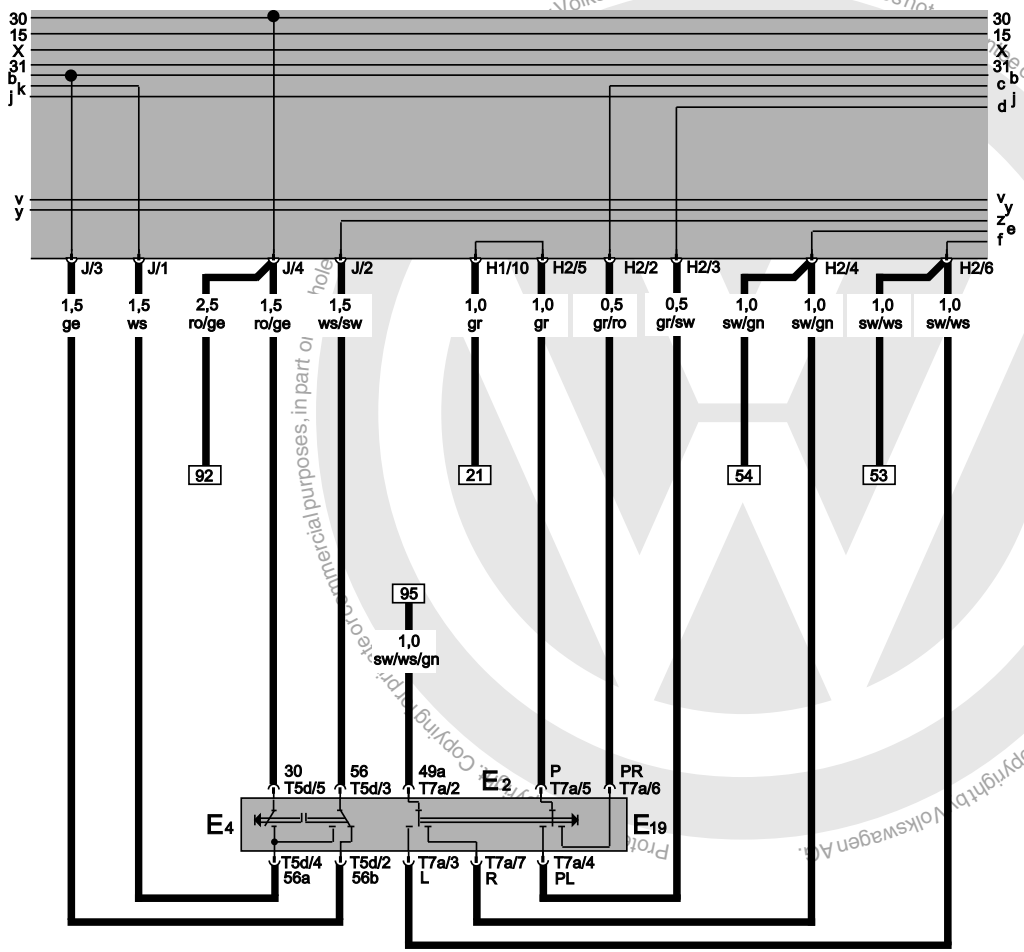

Headlight dipper/flasher switch, turn signal switch, parking light switch

E2	Turn signal switch
E4	Headlight dipper/flasher switch
E19	Parking light switch
T5d	5-pin connector, behind steering column switch trim
T7a	7-pin connector, behind steering column switch trim

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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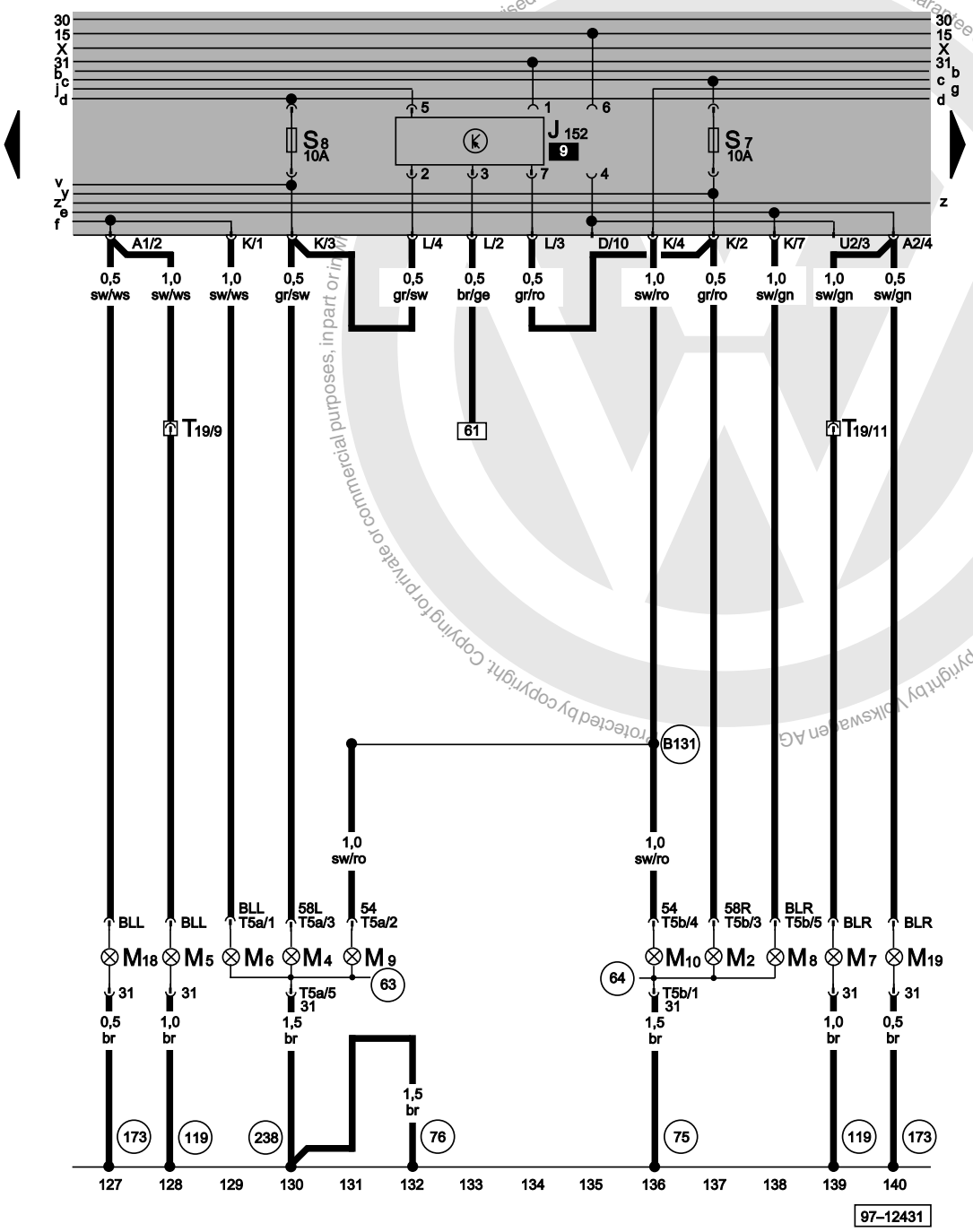

ws = white
sw = black
ro = red
br = brown
gn = green
bl = blue
gr = grey
li = purple
ge = yellow
or = orange
rs = pink

Turn signal, brake light, tail light

J152	Lights switched on warning buzzer
M2	Tail light bulb, right
M4	Tail light bulb, left
M5	Turn signal bulb, front left
M6	Turn signal bulb, rear left
M7	Turn signal bulb, front right
M8	Turn signal bulb, rear right
M9	Brake light bulb, left
M10	Brake light bulb, right
M18	Side turn signal bulb, left
M19	Side turn signal bulb, right
T5a	5-pin connector, left on tail light
T5b	5-pin connector, right on tail light
T19	19-pin connector, left near radiator
63	Earth point, left tail light bulb holder
64	Earth point, right tail light bulb holder
75	Earth point, rear pillar, right
76	Earth point, rear pillar, left
119	Earth connection -1-, in headlight wiring harness
173	Earth connection -1-, in Mono- Motronic wiring harness
238	Earth connection -1-, in interior wiring harness
B131	Connection (54), in interior wiring harness

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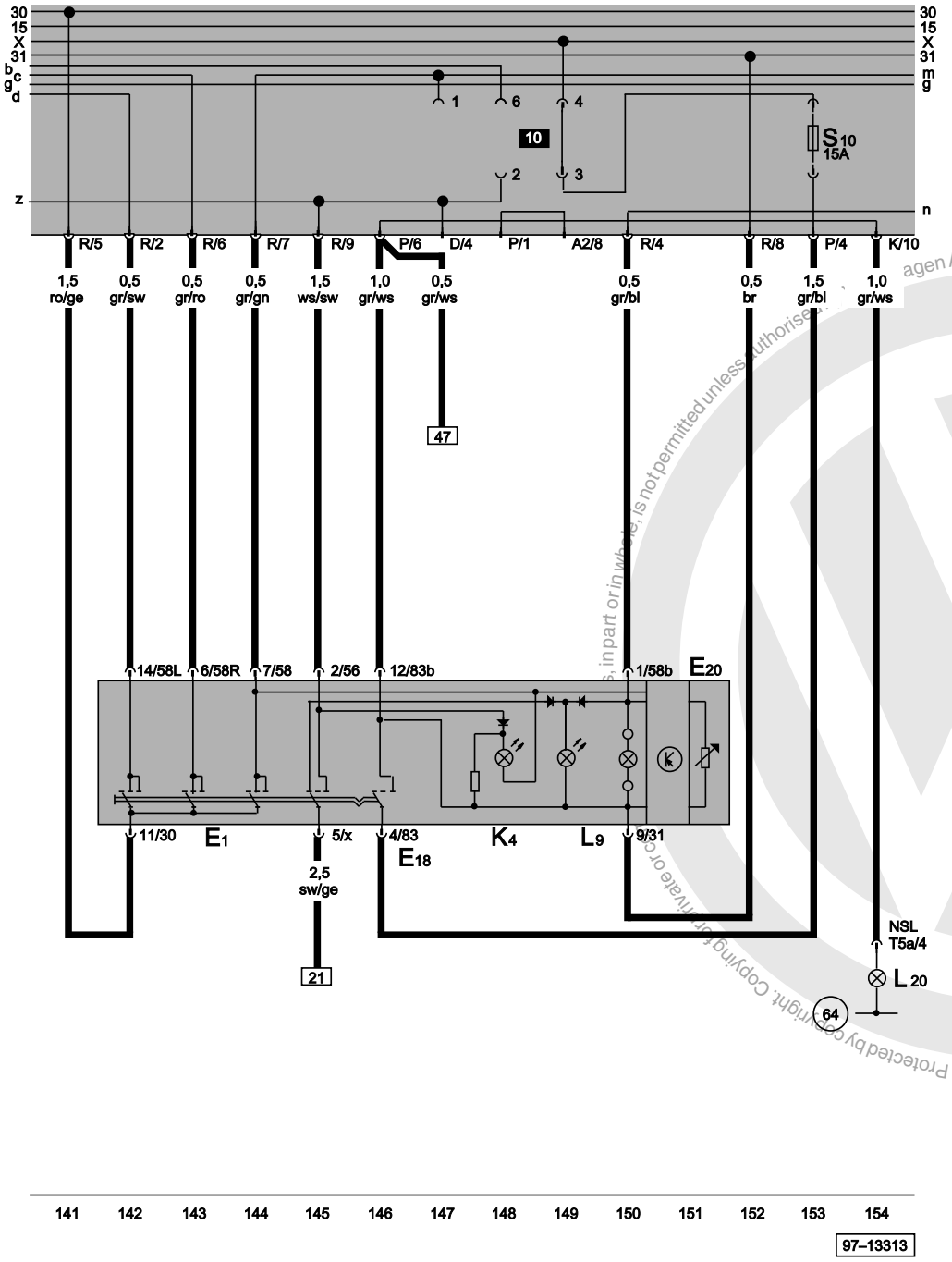

Lighting switch, rear fog light

E1	Lighting switch
E18	Rear fog light switch
E20	Switches and instruments - lighting control
K4	Side light warning lamp
L9	Lighting switch light bulb
L20	Rear fog light bulb
T5a	5-pin connector, right on tail light
64	Earth point, right tail light bulb holder

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
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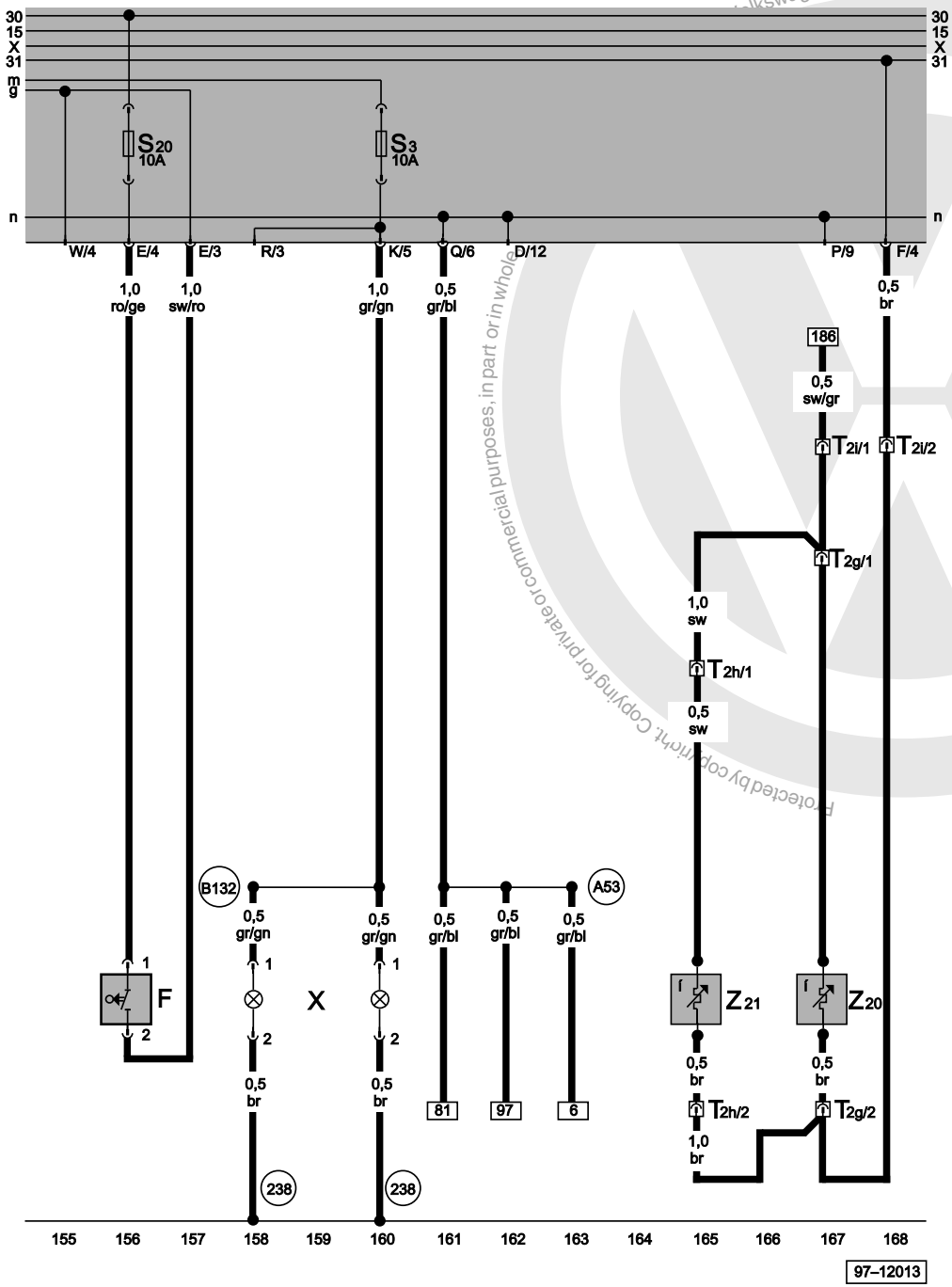

Brake light switch, number plate light, heated windscreen washer jets

F	Brake light switch
T2g	2-pin connector, left on bonnet
T2h	2-pin connector, right on bonnet
T2i	2-pin connector, left in plenum chamber
X	Number plate light
Z20	Heater element, left washer jet
Z21	Heater element, right washer jet
238	Earth connection -1-, in interior wiring harness
A53	Positive connection (58b), in dash panel wiring harness
B132	Connection (number plate lights), in interior wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
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or	=	orange
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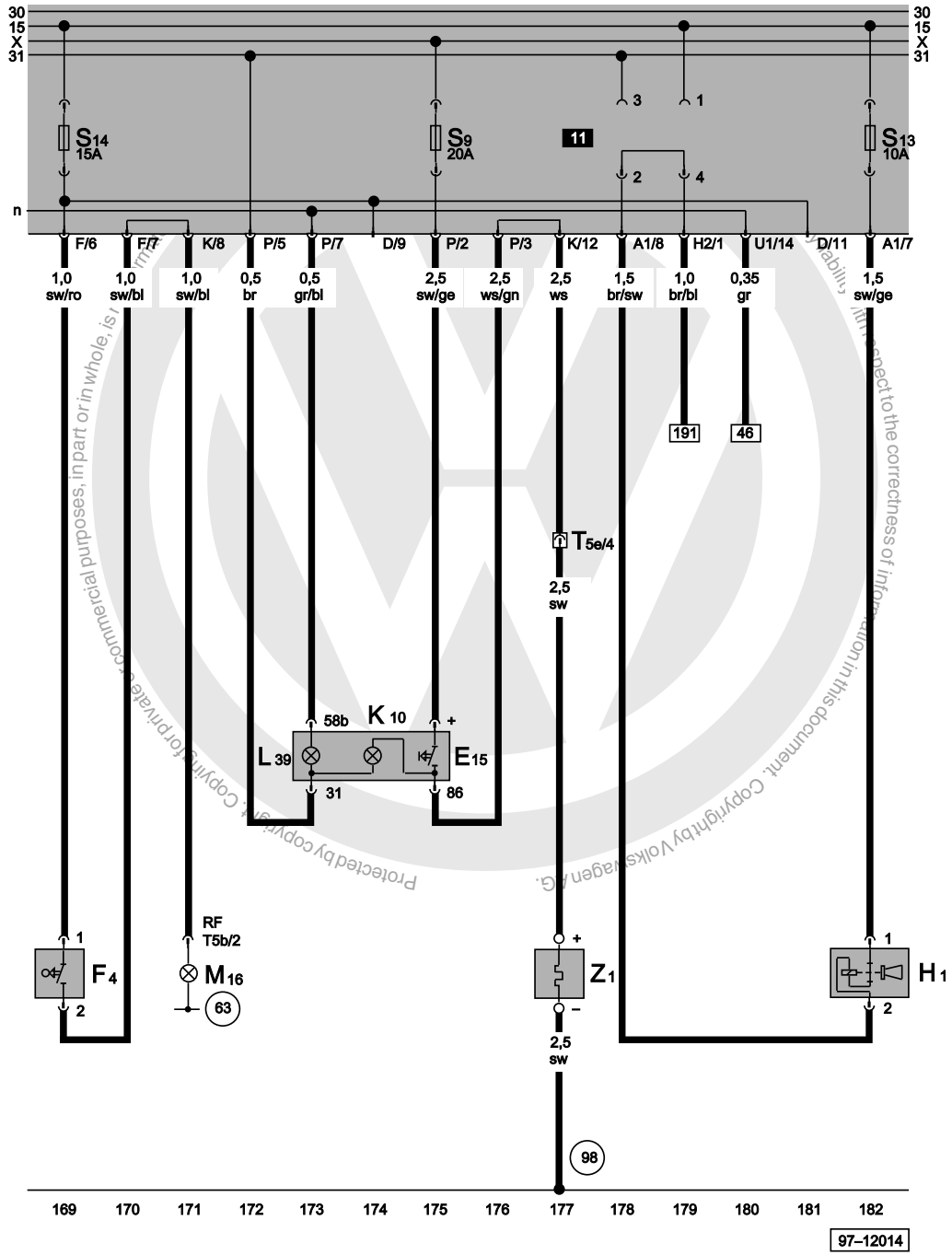

Reversing light, heated rear window, horn

E15	Heated rear window switch
F4	Reversing light switch
H1	Horn
K10	Heated rear window warning lamp
L39	Heated rear window switch bulb
M16	Reversing light bulb, left
T5b	5-pin connector, left on tail light
T5e	5-pin connector, left behind C-pillar trim
Z1	Heated rear window
63	Earth point, left tail light bulb holder
98	Earth connection, in tailgate/boot lid wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
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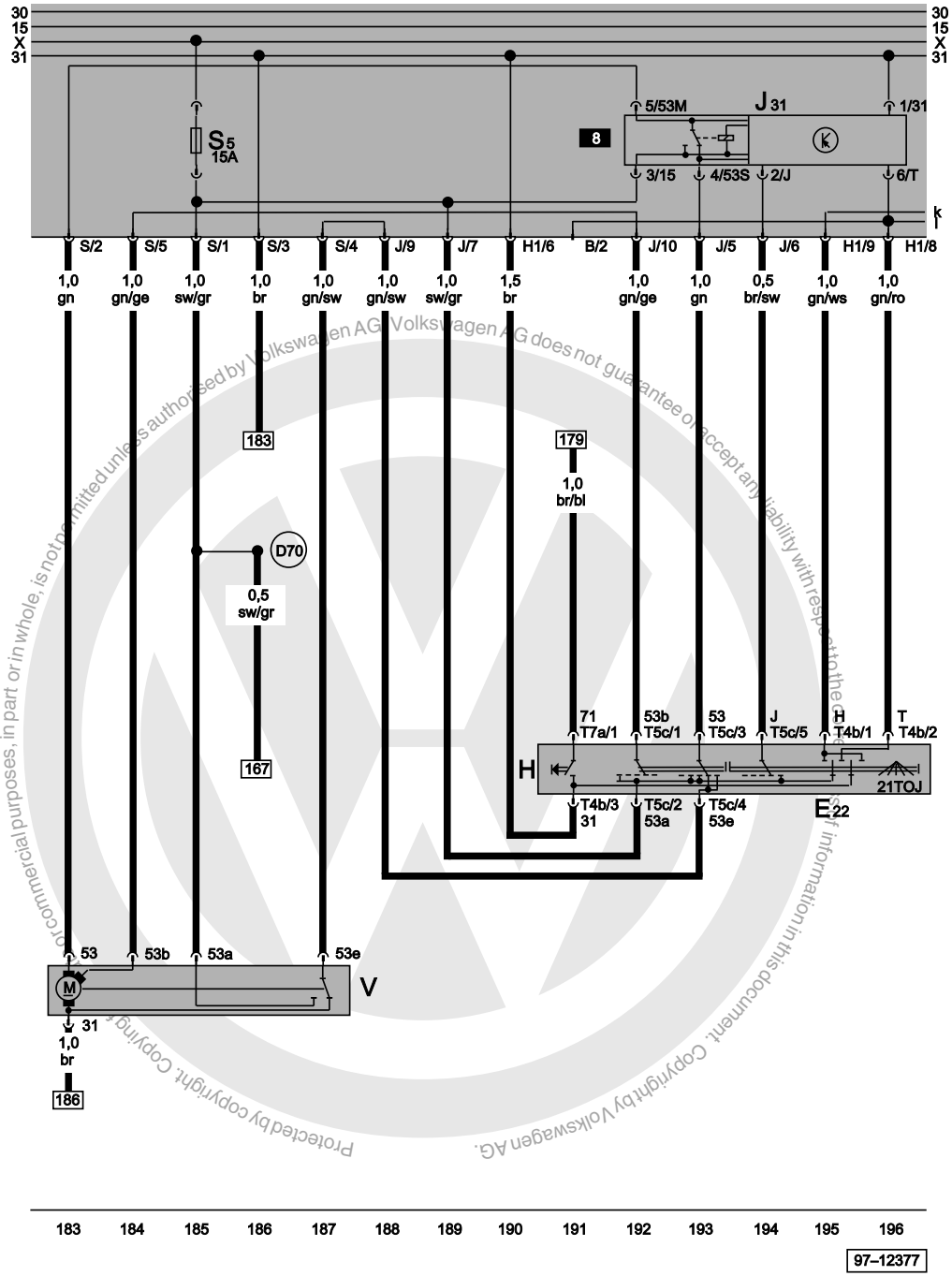

Windscreen wpe/washer system

E22	Intermittent wiper switch
H	Horn plate
J31	Automatic intermittent wash/wipe relay
T4	4-pin connector, behind steering column switch trim
T5c	5-pin connector, behind steering column switch trim
T7a	7-pin connector, behind steering column switch trim
V	Windscreen wiper motor
D70	Connection (53a), in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
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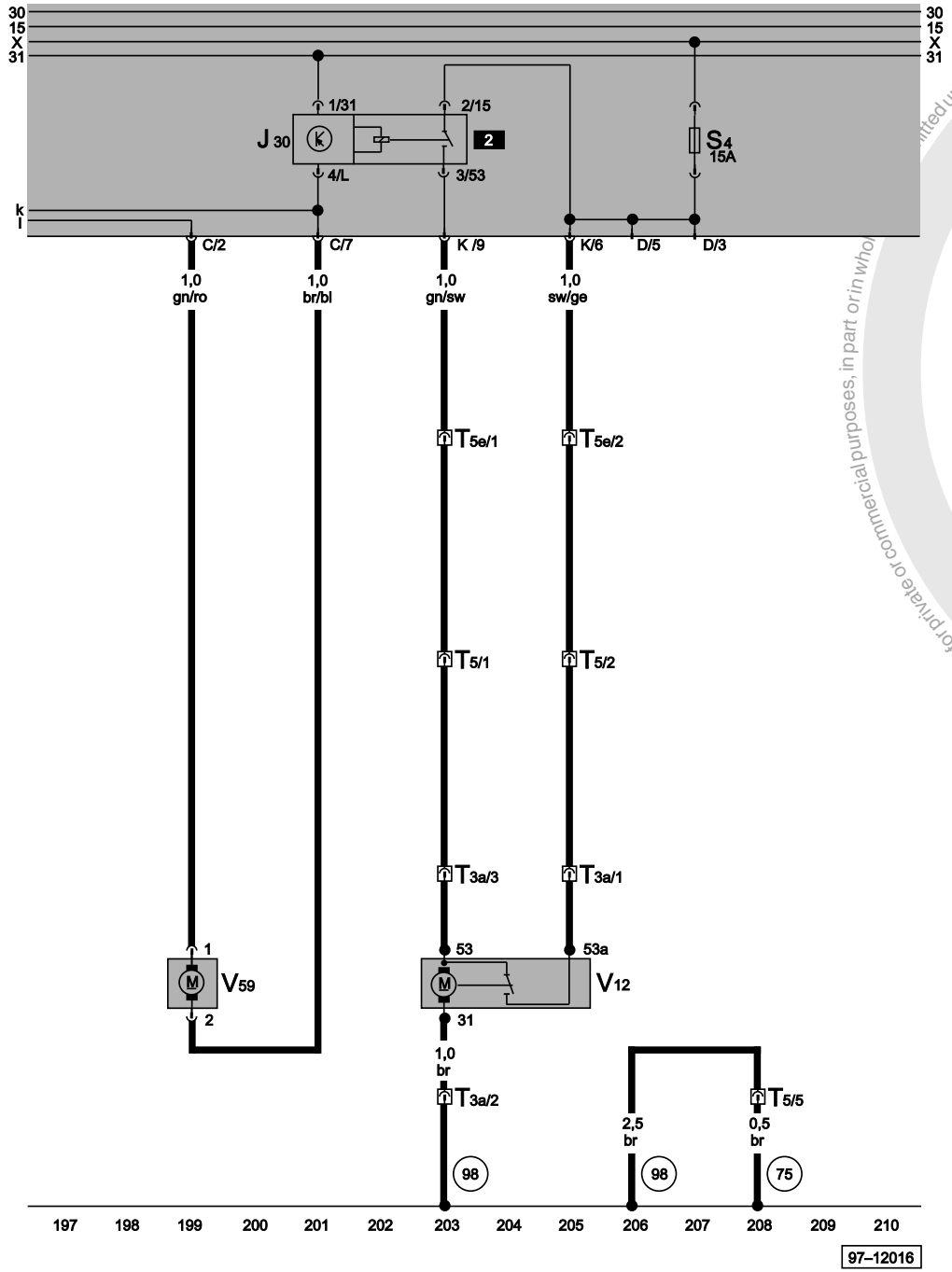

Rear window wipe/wash system

J30	Rear window wiper/washer relay
T3a	3-pin connector, in tailgate/boot lid, near wiper motor
T5	5-pin connector, in tailgate/boot lid
T5e	5-pin connector, left behind C-pillar trim
V12	Rear window wiper motor
V59	Windscreen and rear window washer pump
75	Earth point, rear pillar, right
98	Earth connection, in tailgate/boot lid wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
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1.0 ltr./33 kW Mono-Motronic, engine code AEV, 1.3 ltr./40 kW Mono-Motronic, engine code ADX, 1.6 ltr./55 kW Mono-Motronic, engine code AEA

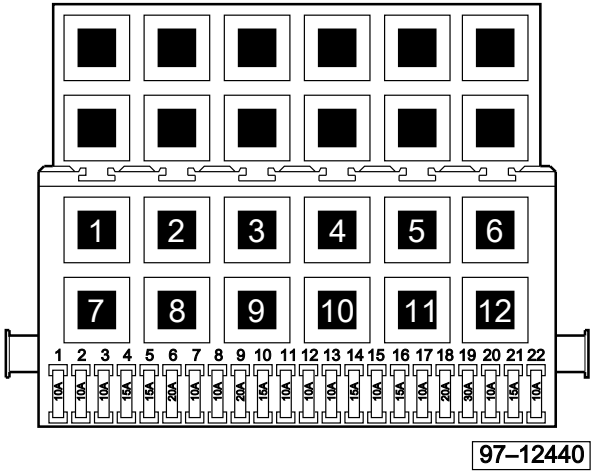
From October 1994

1.6 ltr./55 kW Mono-Motronic, engine code AEA, from October 1994

1.0 ltr./33 kW Mono-Motronic, engine code AEV, from October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



12 - Fuel pump relay (167)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue

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10 A - red

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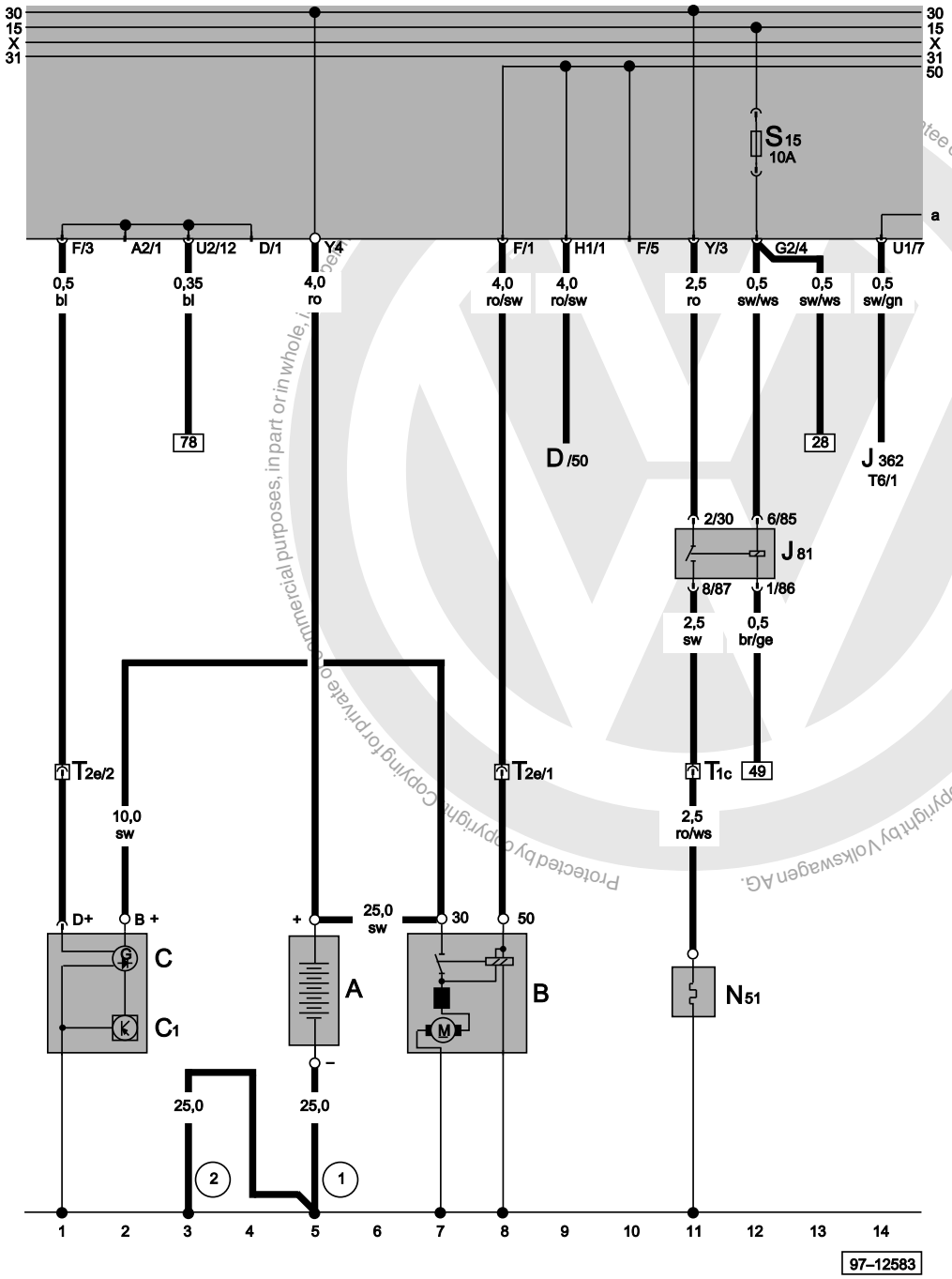

Battery, alternator, starter, intake manifold preheating

A	Battery
B	Starter
C	Alternator
C1	Voltage regulator
D	Ignition/starter switch
J81	Intake manifold preheating relay
J362	Immobilizer control unit, next to steering column
N51	Intake manifold preheating heater element
T1c	Single connector, near intake manifold
T2e	2-pin connector, on gearbox
T6	6-pin connector, on immobilizer control unit
(1)	Earth strap, battery body
(2)	Earth strap, gearbox - body

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
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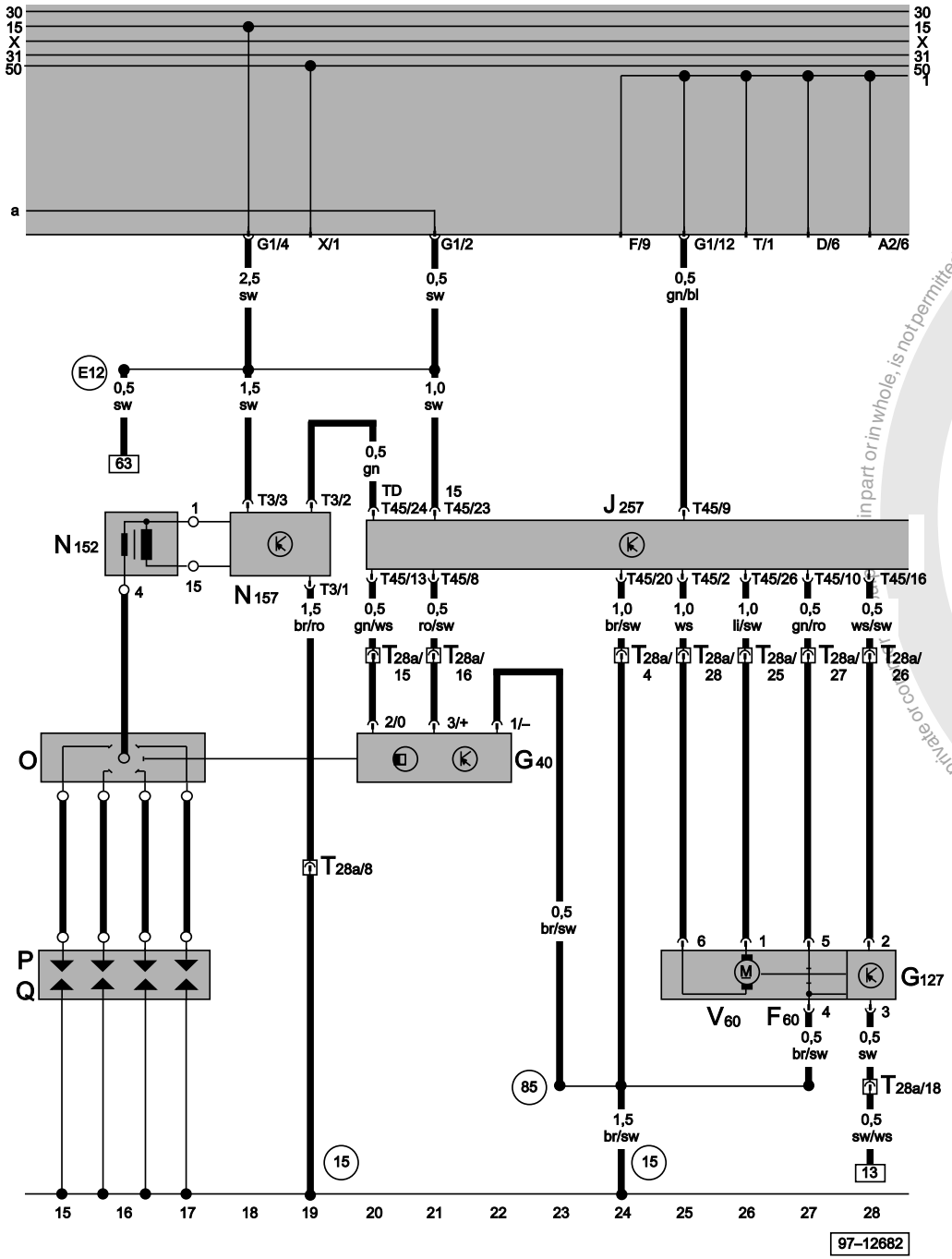

Mono-Motronic control unit, ignition system, Hall sender, throttle valve positioner

F60	Idling switch
G40	Hall sender
G127	Throttle valve positioner sender
J257	Mono-Motronic control unit, centre in plenum chamber
N152	Ignition transformer
N157	Ignition transformer output stage
O	Ignition distributor
P	Spark plug connector
Q	Flame plug
T3	3-pin connector, on ignition transformer output stage
T28a	28-pin connector, on engine
T45	45-pin connector, on Mono-Motronic control unit
V60	Throttle valve positioner
15	Earth point, on cylinder head
85	Earth connection -1-, in engine compartment wiring harness
E12	Positive (+) connection -1- (15), in Mono-Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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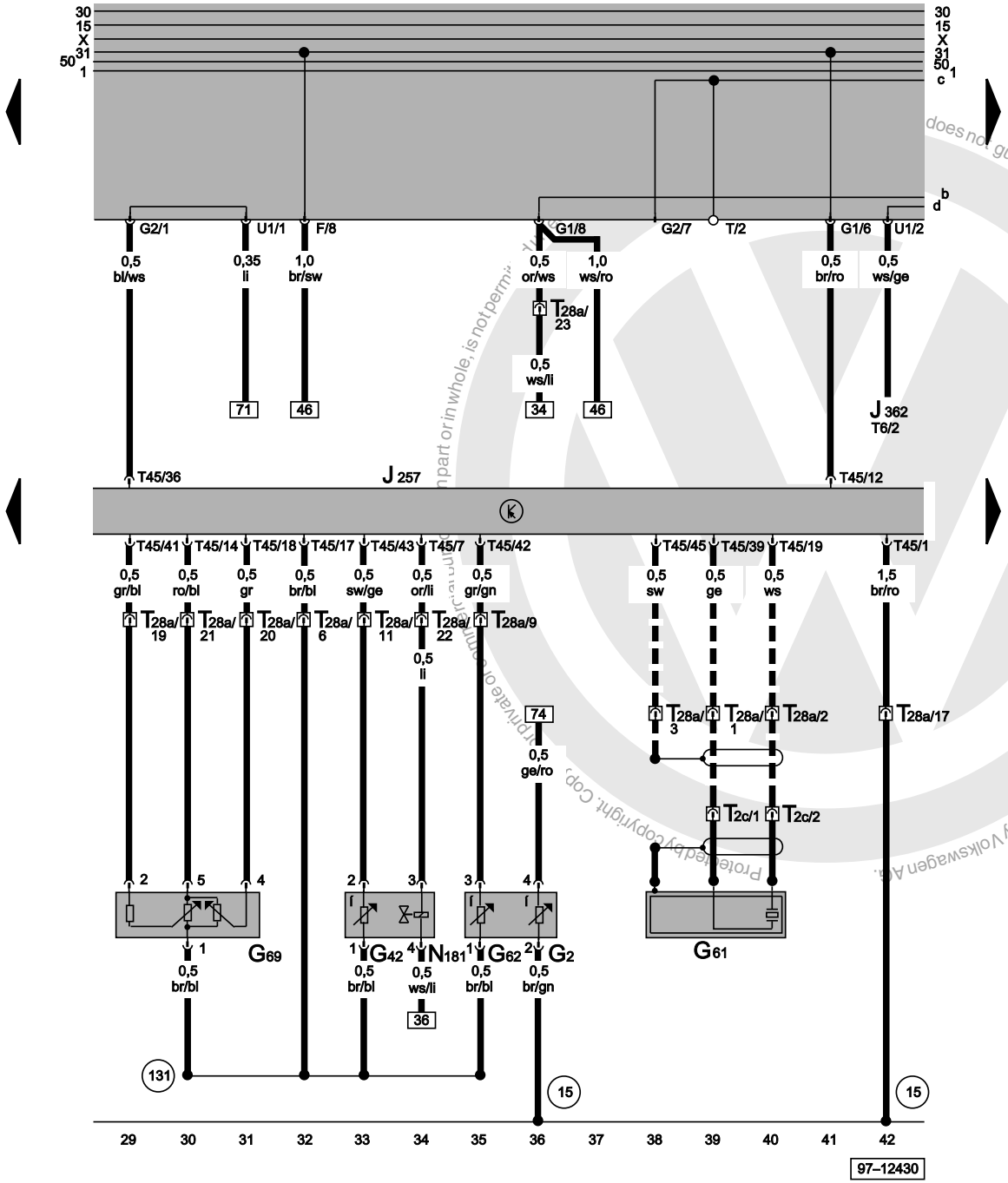

Mono-Motronic control unit, throttle valve potentiometer, injector, knock sensor

G2	Coolant temperature sender
G42	Intake air temperature sender
G61	Knock sensor I (for engine codes ADX and AEA only)
G62	Coolant temperature sender
G69	Throttle valve potentiometer
J257	Mono-Motronic control unit, centre in plenum chamber
J362	Immobilizer control unit, next to steering column
N181	Injector
T2c	2-pin connector, on engine
T6	6-pin connector, on immobilizer control unit
T28a	28-pin connector, on engine
T45	45-pin connector, on Mono-Motronic control unit
15	Earth point, on cylinder head
131	Earth connection -2-, in engine compartment wiring harness
---	For engine codes ADX and AEA only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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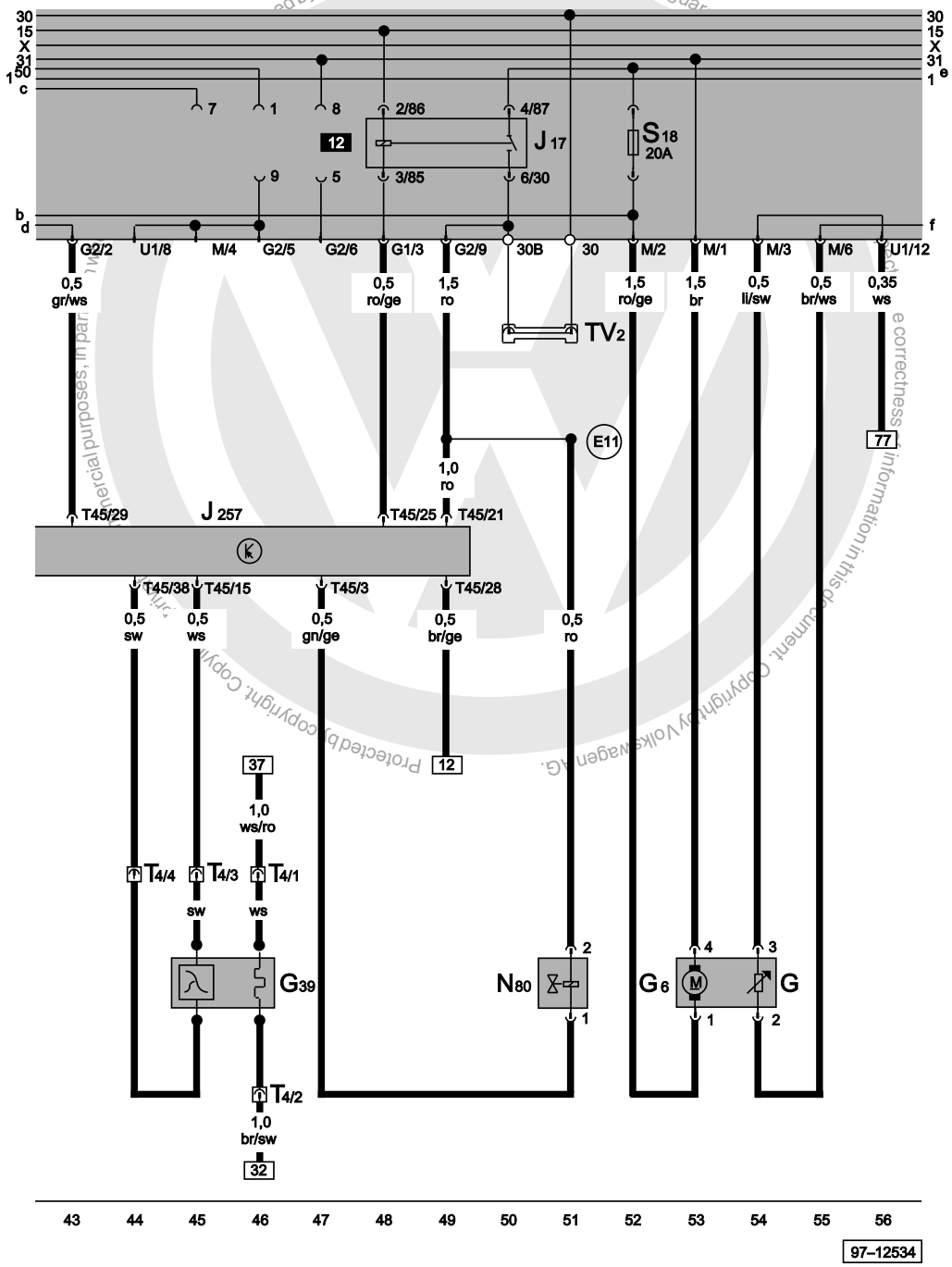

Mono-Motronic control unit, Lambda probe, fuel supply system

G	Fuel gauge sender
G6	Fuel pump
G39	Lambda probe
J17	Fuel pump relay
J257	Mono-Motronic control unit, centre in plenum chamber
N80	Activated charcoal filter system solenoid valve I (pulsed)
T4	4-pin connector, on gearbox
T45	45-pin connector, on Mono-Motronic control unit
TV2	Terminal 30 junction box
E11	Positive connection (30), in Mono-Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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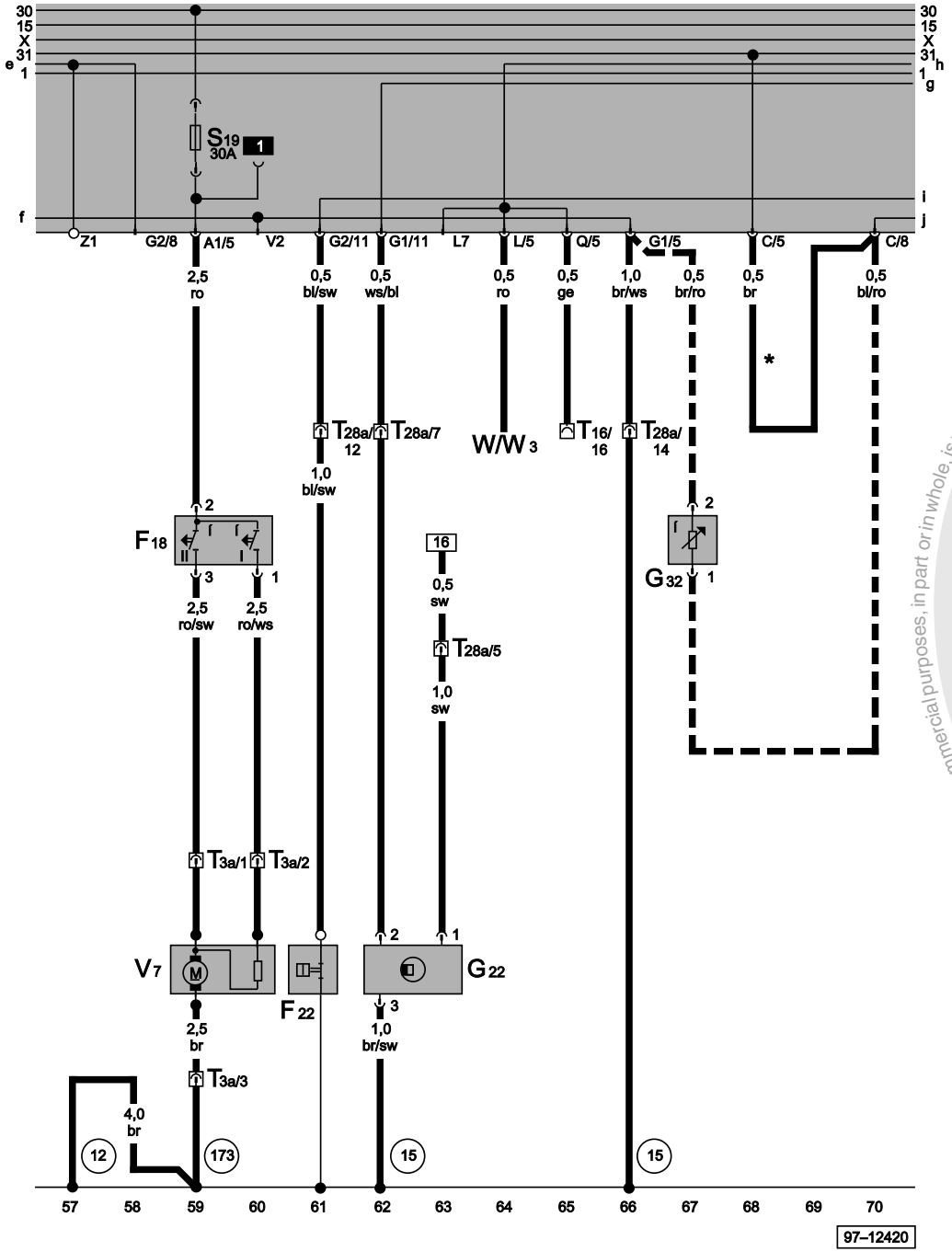

Radiator fan, speedometer sender, oil pressure switch

F18	Radiator fan thermo-switch
F22	Oil pressure switch (0.3 bar)
G22	Speedometer sender (Hall sender on gearbox)
G32	Coolant shortage indicator sender
T3a	3-pin connector, on radiator fan
T16	16-pin connector, behind shelf driver's side, - Self-diagnosis connection for V.A.G 1551 -
T28a	28-pin connector, on engine
V7	Radiator fan
W	Interior light, front
W3	Luggage compartment light
12	Earth point, left in engine compartment, under battery
15	Earth point, on cylinder head
173	Earth connection -1-, in Mono- Motronic wiring harness
*	For vehicles without coolant shortage indicator only
---	For vehicles with coolant shortage indicator only - gradual introduction

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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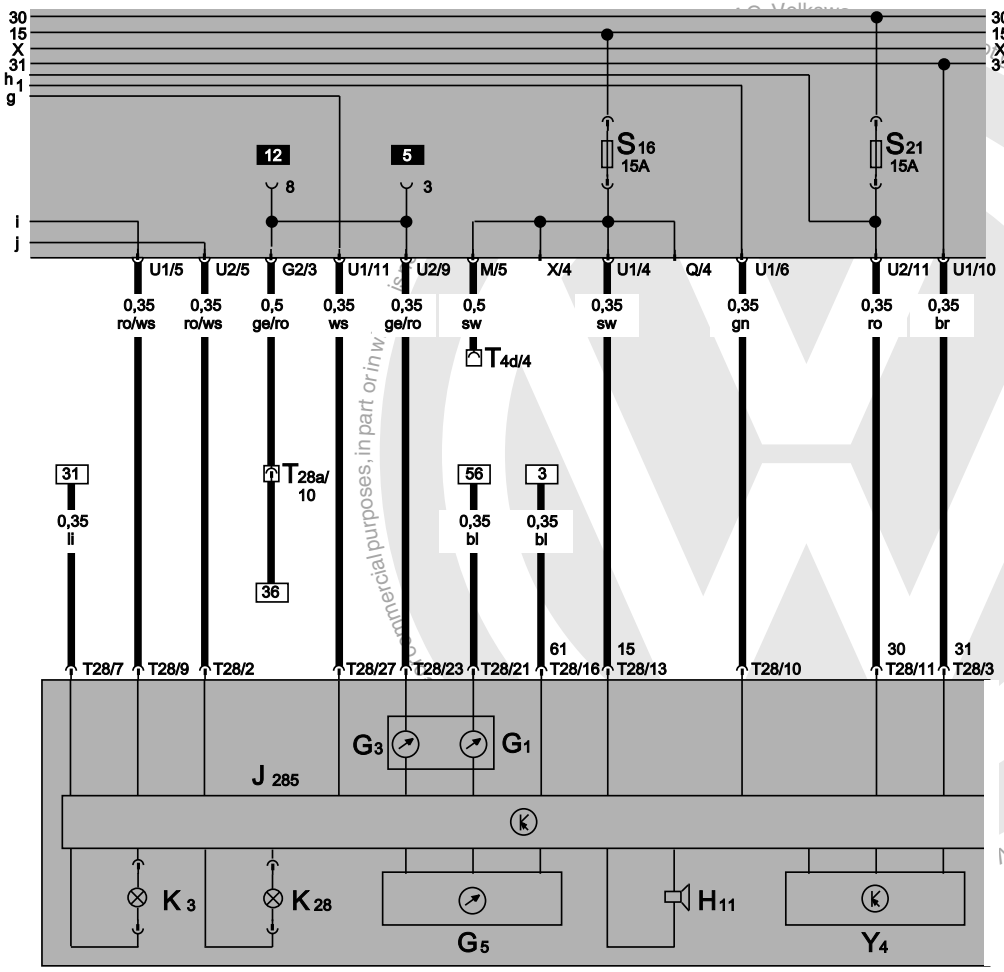

Dash panel insert, fuel gauge, coolant shortage and coolant temperature warning/gauge, optical and acoustic oil pressure warning, odometer display

G1	Fuel gauge
G3	Coolant temperature gauge
G5	Rev. counter
H11	Oil pressure warning buzzer
J285	Control unit with display in dash panel insert
K3	Oil pressure warning lamp
K28	Coolant temperature/coolant shortage warning lamp
T4d	4-pin connector, behind relay plate
T28	28-pin connector, on dash panel insert
T28a	28-pin connector, on engine
Y4	Odometer display

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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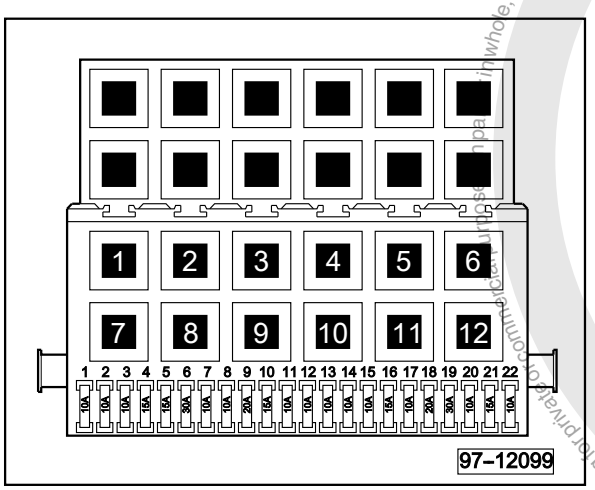
Anti-locking brake system (ABS)

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



4 - X contact relief relay (18)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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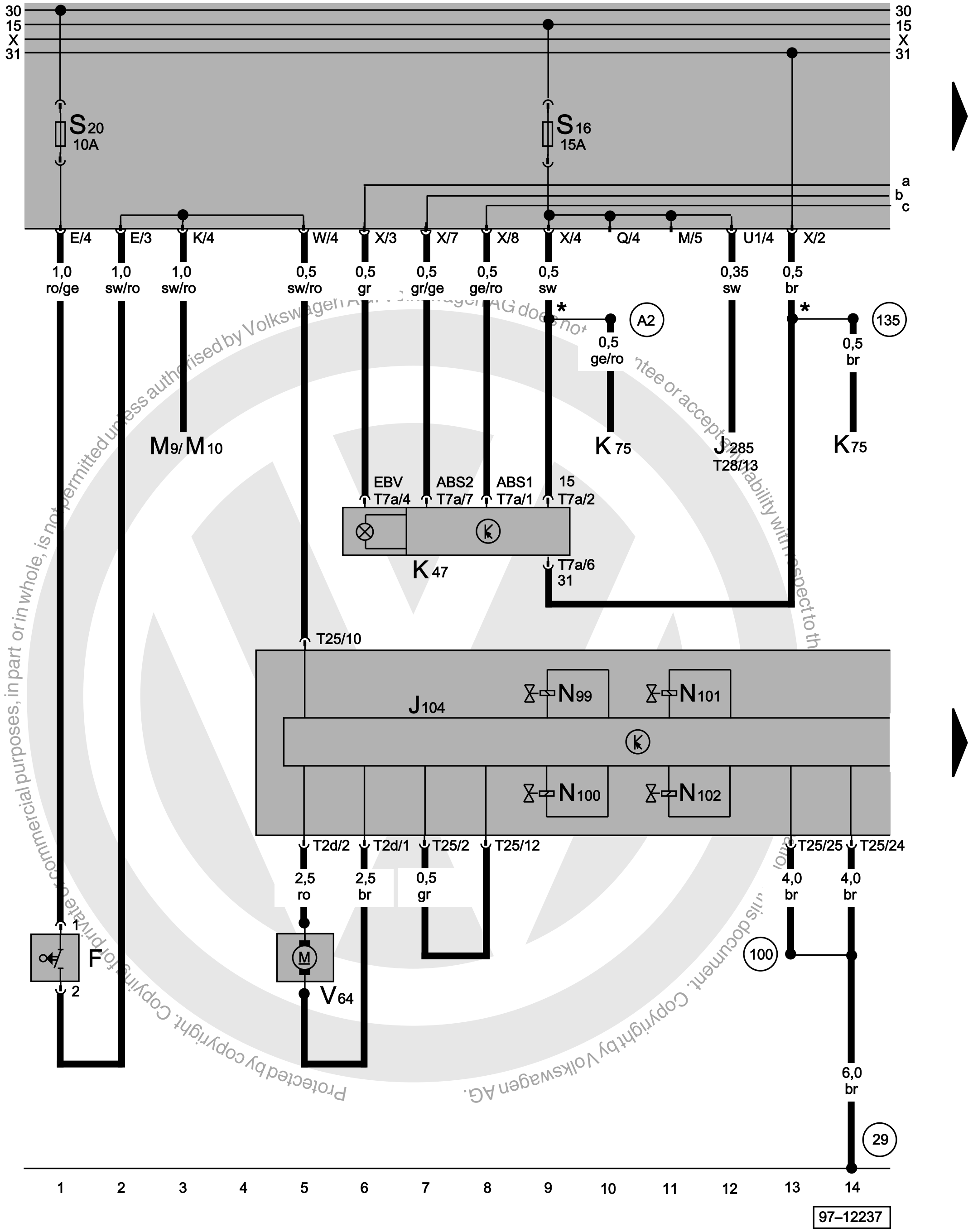

ABS control unit, ABS warning lamp, ABS hydraulic pump, brake light switch

F	Brake light switch
F9	Handbrake warning switch
F34	Brake fluid level warning contact
J104	ABS control unit, left in engine compartment
J285	Control unit with display in dash panel insert
K47	ABS warning lamp
K75	Airbag warning lamp
M9	Brake light bulb, left
M10	Brake light bulb, right
N99	ABS inlet valve, front right
N100	ABS outlet valve, front right
N101	ABS inlet valve, front left
N102	ABS outlet valve, front left
T2d	2-pin connector, on ABS control unit
T7a	7-pin connector, on ABS warning lamp
T25	25-pin connector, on ABS control unit
T28	28-pin connector, on dash panel insert
V64	ABS hydraulic pump, on ABS control unit
29	Earth point, near battery
100	Earth connection -1-, in ABS wiring harness
135	Earth connection -2-, in dash panel wiring harness
A2	Positive (+) connection (15), in dash panel wiring harness
*	Wiring connector only on vehicles with airbag

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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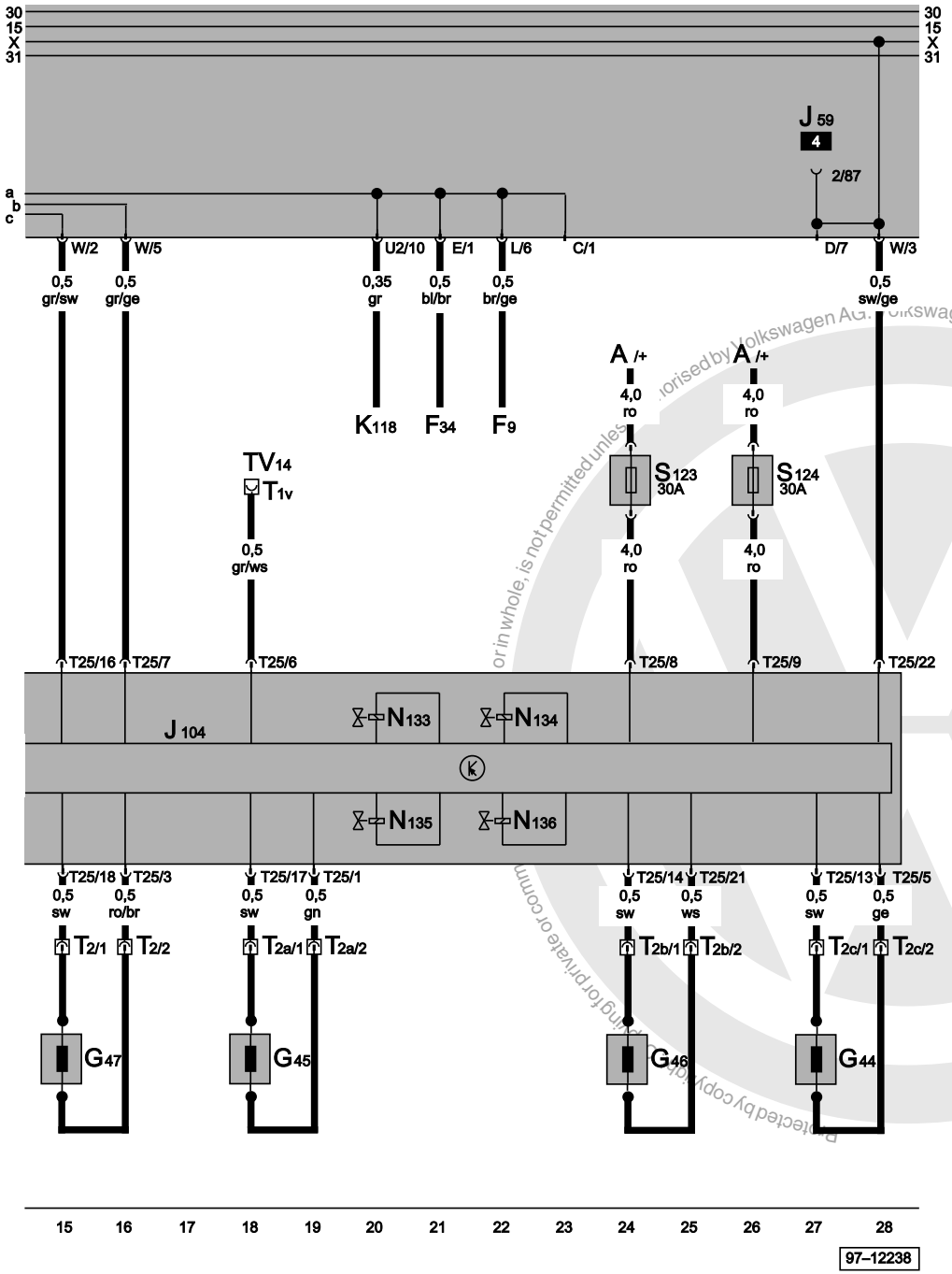

ABS control unit, speed sensor

A	Battery
F9	Handbrake warning switch
F34	Brake fluid level warning contact
G44	Rear right speed sensor
G45	Front right speed sensor
G46	Rear left speed sensor
G47	Front left speed sensor
J59	X contact relief relay
J104	ABS control unit, left in engine compartment
K118	Brake system warning lamp, in dash panel insert
N133	ABS inlet valve, rear right
N134	ABS inlet valve, rear left
N135	ABS outlet valve, rear right
N136	ABS outlet valve, rear left
S123	ABS control unit fuse 1
S124	ABS control unit fuse 2
T1v	Single connector
T2	2-pin connector, left rear suspension strut
T2a	2-pin connector, right rear suspension strut
T2b	2-pin connector, under rear seat
T2c	2-pin connector, under rear seat
T25	25-pin connector, on ABS control unit
TV14	Self-diagnosis junction box, above the relay plate

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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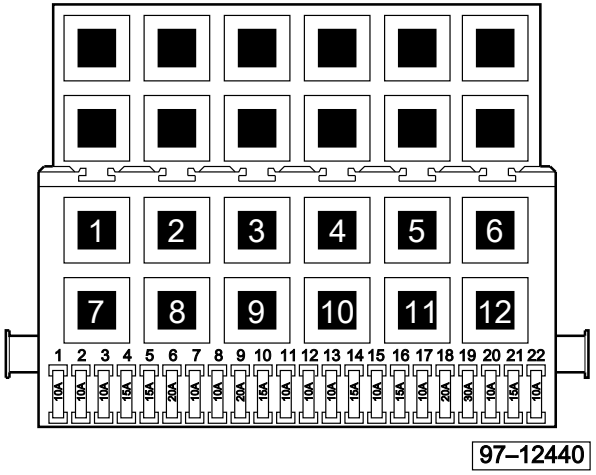
Airbag

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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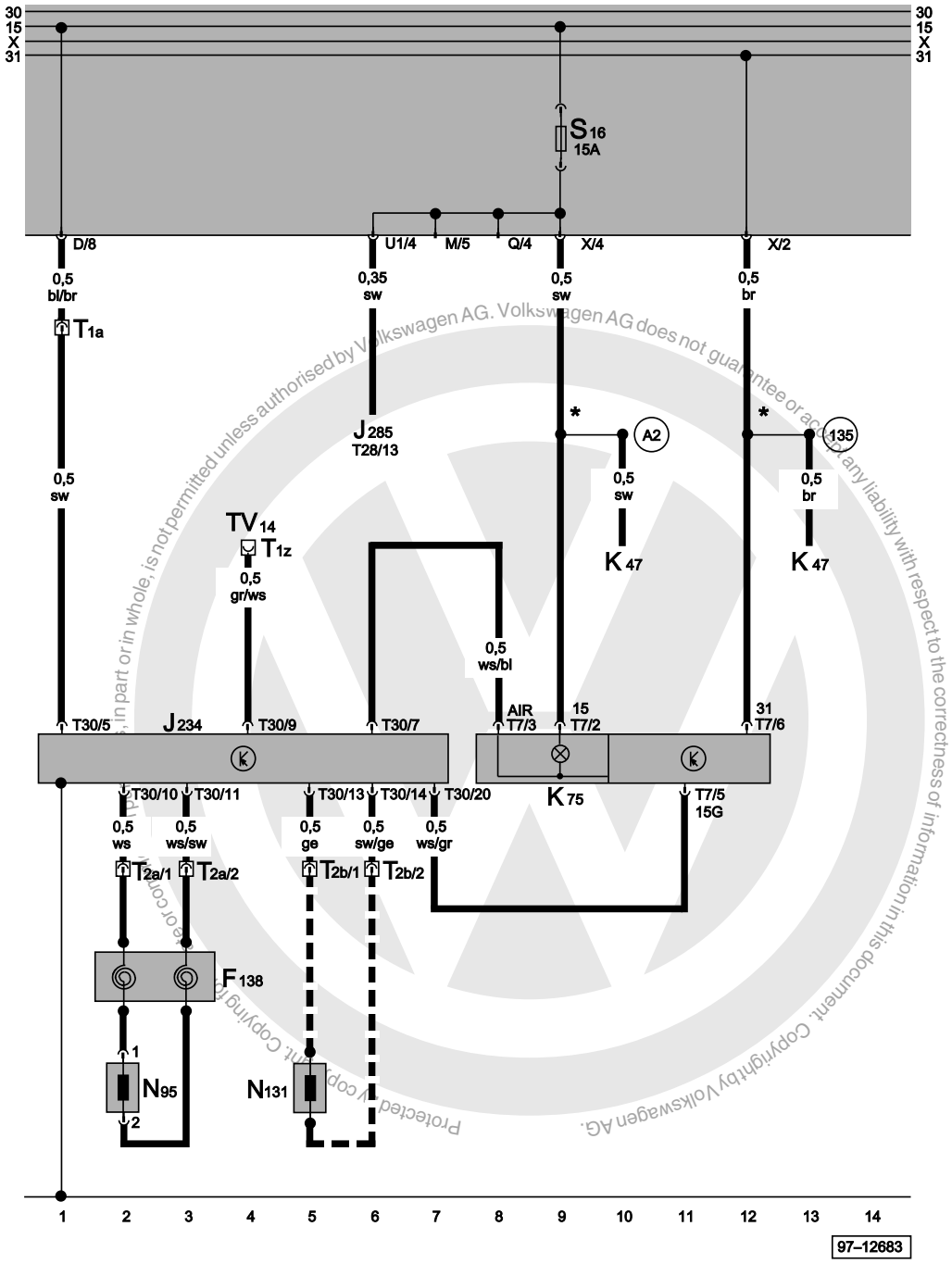

Airbag control unit, airbag warning lamp, airbag igniter, coil connector

F138	Coil spring for airbag
J234	Airbag control unit, behind console
J285	Control unit with display in dash panel insert
K47	ABS warning lamp
K75	Airbag warning lamp
N95	Airbag igniter, driver side
N131	Airbag igniter 1, front passenger side
T1a	1-Single connector, behind relay plate
T1z	Single connector
T2a	2-pin connector, behind steering column switch trim
T2b	2-pin connector, right behind dash panel
T7	7-pin connector, on airbag warning lamp
T28	28-pin connector, on dash panel insert
T30	30-pin connector, on airbag control unit
TV14	Self-diagnosis junction box, above the relay plate
(135)	Earth connection -2-, in dash panel wiring harness
(A2)	Positive (+) connection (15), in dash panel wiring harness
*	Wiring connector only on vehicles with ABS
---	For vehicles with front passenger's airbag only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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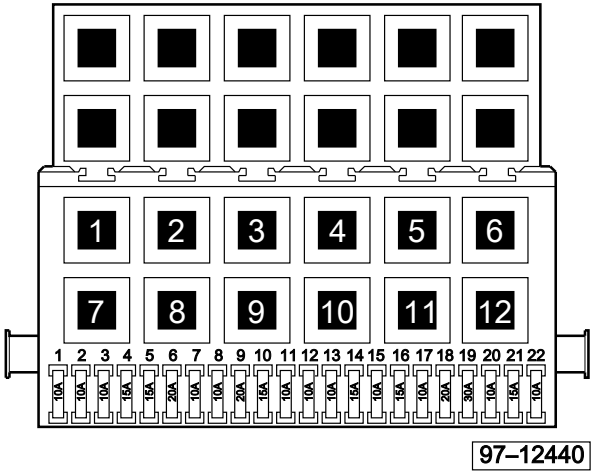
Radio system "alpha" with 2 loudspeakers

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



9 - Lights on warning buzzer (36)

Note!

- *The number in brackets behind the part designation denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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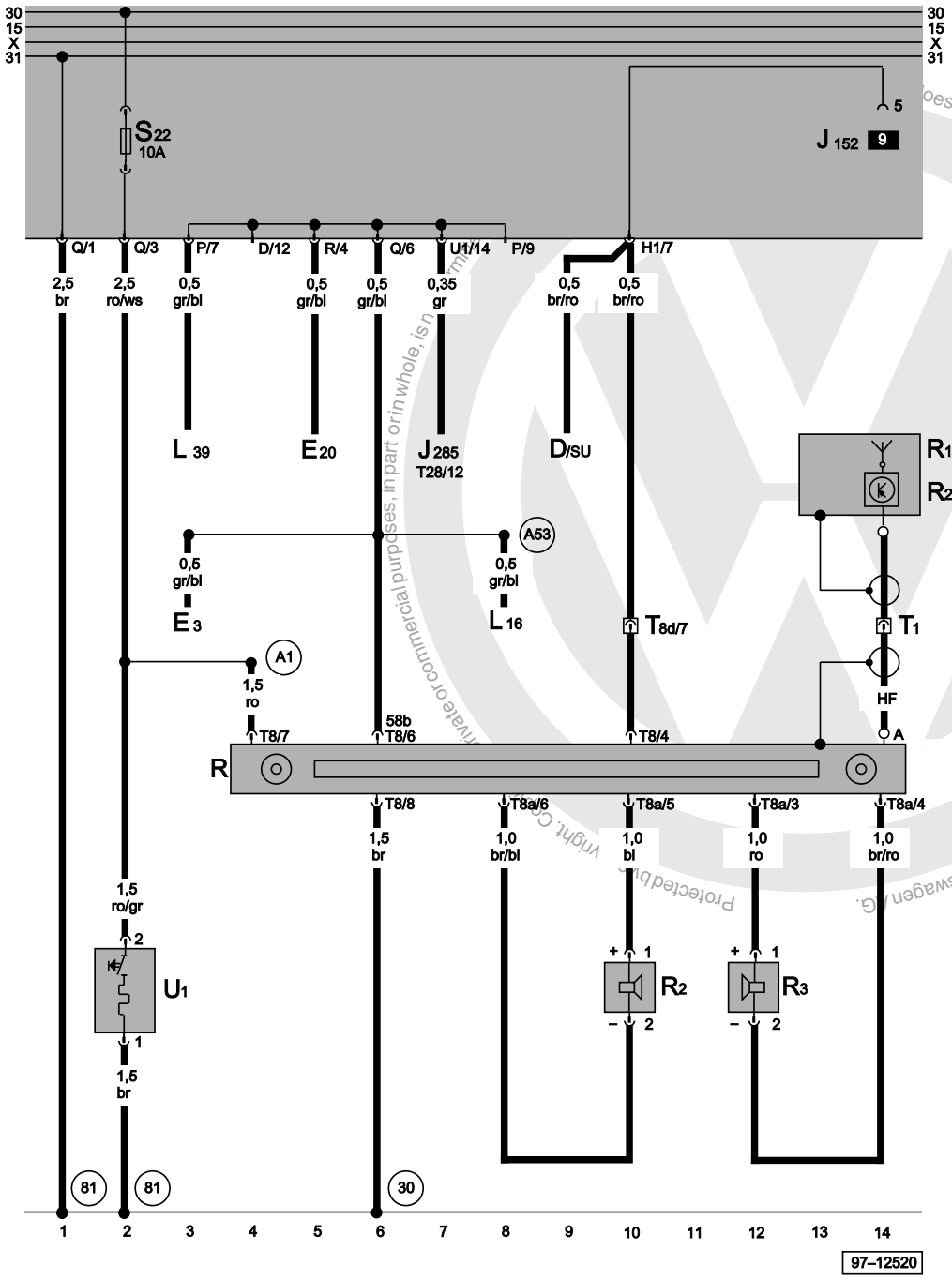

Radio, front loudspeaker, electronically amplified roof aerial, cigarette lighter

D	Ignition/starter switch
E3	Hazard warning light switch
E20	Switches and instruments - lighting control
J152	Lights switched on warning buzzer
J285	Control unit with display in dash panel insert
L16	Fresh air controls light bulb
L39	Heated rear window switch bulb
R	Radio
R2	Loudspeaker, front left
R3	Loudspeaker, front right
R11	Aerial
R24	Aerial amplifier
T1	Single connector, left on lower A-pillar
T8	8-pin connector, on radio
T8a	8-pin connector, on radio
T8d	8-pin connector, behind relay plate
T28	28-pin connector, on dash panel insert
U1	Cigarette lighter
30	Earth point -1-, next to relay plate
81	Earth connection -1-, in dash panel wiring harness
A1	Positive (+) connection (30a), in dash panel wiring harness
A53	Positive connection (58b), in dash panel wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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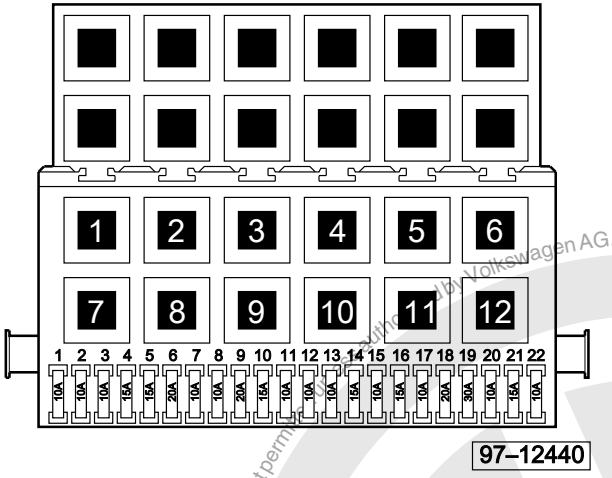
Radio system "beta" with 4 loudspeakers

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



9 - Lights on warning buzzer (36)

Note!

- *The number in brackets behind the part designation denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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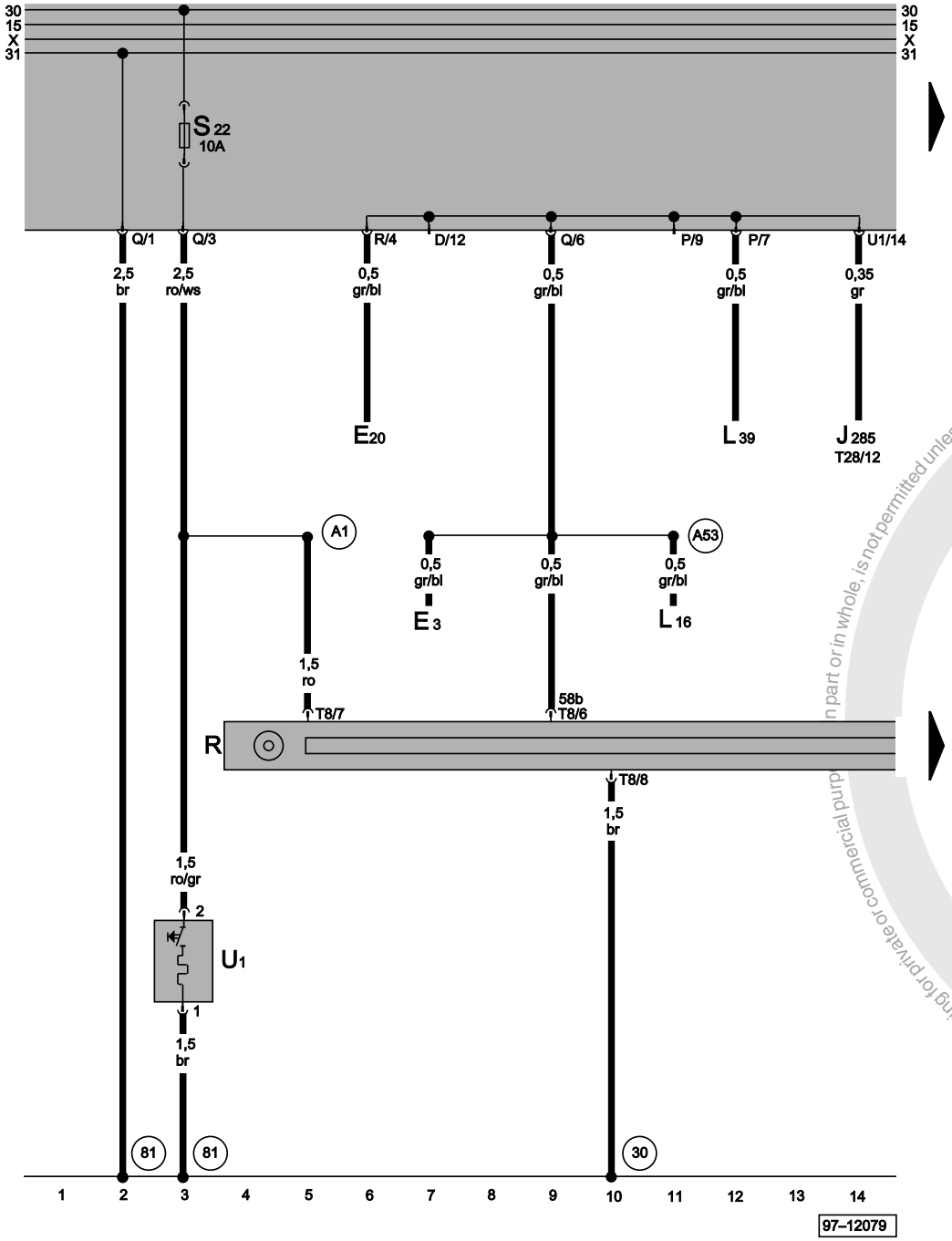

Radio, cigarette lighter

E3	Hazard warning light switch
E20	Switches and instruments - lighting control
J285	Control unit with display in dash panel insert
L16	Fresh air controls light bulb
L39	Heated rear window switch bulb
R	Radio
T8	8-pin connector, on radio
T28	28-pin connector, on dash panel insert
U1	Cigarette lighter
30	Earth point -1-, next to relay plate
81	Earth connection -1-, in dash panel wiring harness
A1	Positive (+) connection (30a), in dash panel wiring harness
A53	Positive connection (58b), in dash panel wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
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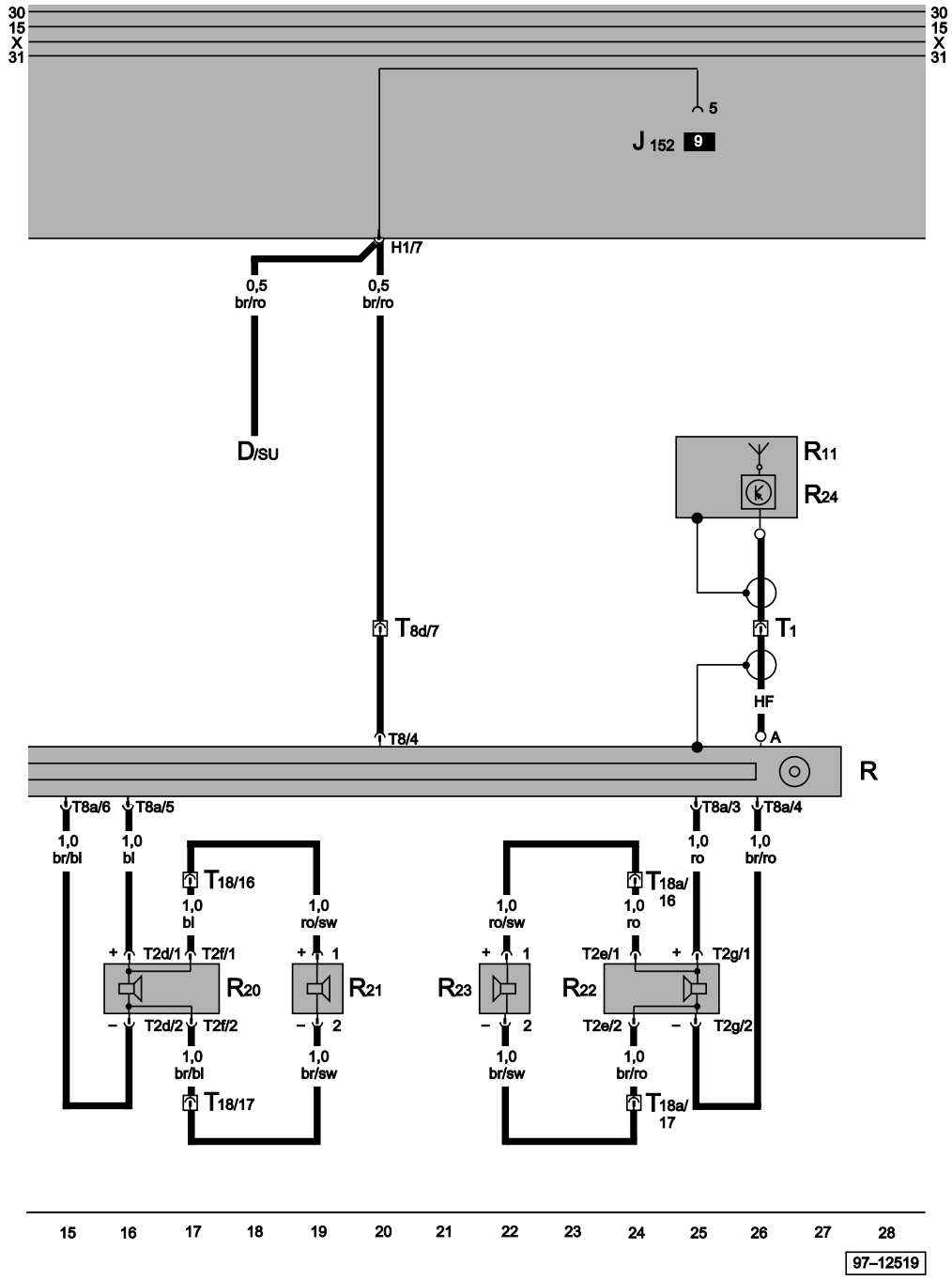

Radio, front loudspeaker, electronically amplified roof aerial

D	Ignition/starter switch
J152	Lights switched on warning buzzer
R	Radio
R11	Aerial
R20	Treble loudspeaker, front left
R21	Bass loudspeaker, front left
R22	Treble loudspeaker, front right
R23	Bass loudspeaker, front right
R24	Aerial amplifier
T1	Single connector, left on lower A-pillar
T2d	2-pin connector, front left on treble tone loudspeaker
T2e	2-pin connector, front right on treble tone loudspeaker
T2f	2-pin connector, front left on treble tone loudspeaker
T2g	2-pin connector, front right on treble tone loudspeaker
T8	8-pin connector, on radio
T8a	8-pin connector, on radio
T8d	8-pin connector, behind relay plate
T18	18-pin connector, left on lower A-pillar
T18a	18-pin connector, right on lower A-pillar

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
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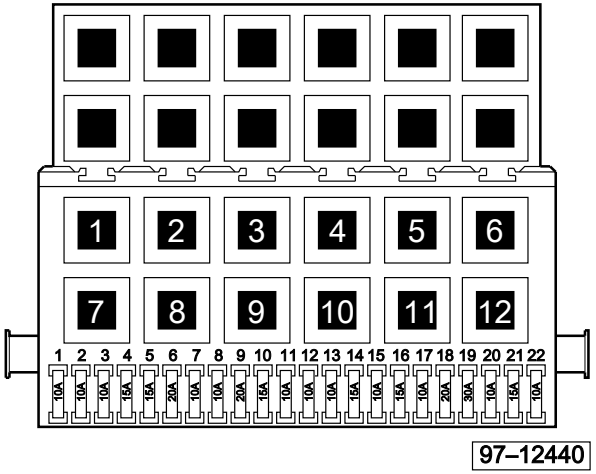
Fog lights

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



4 - X contact relief relay (18)
9 - Lights on warning buzzer (36)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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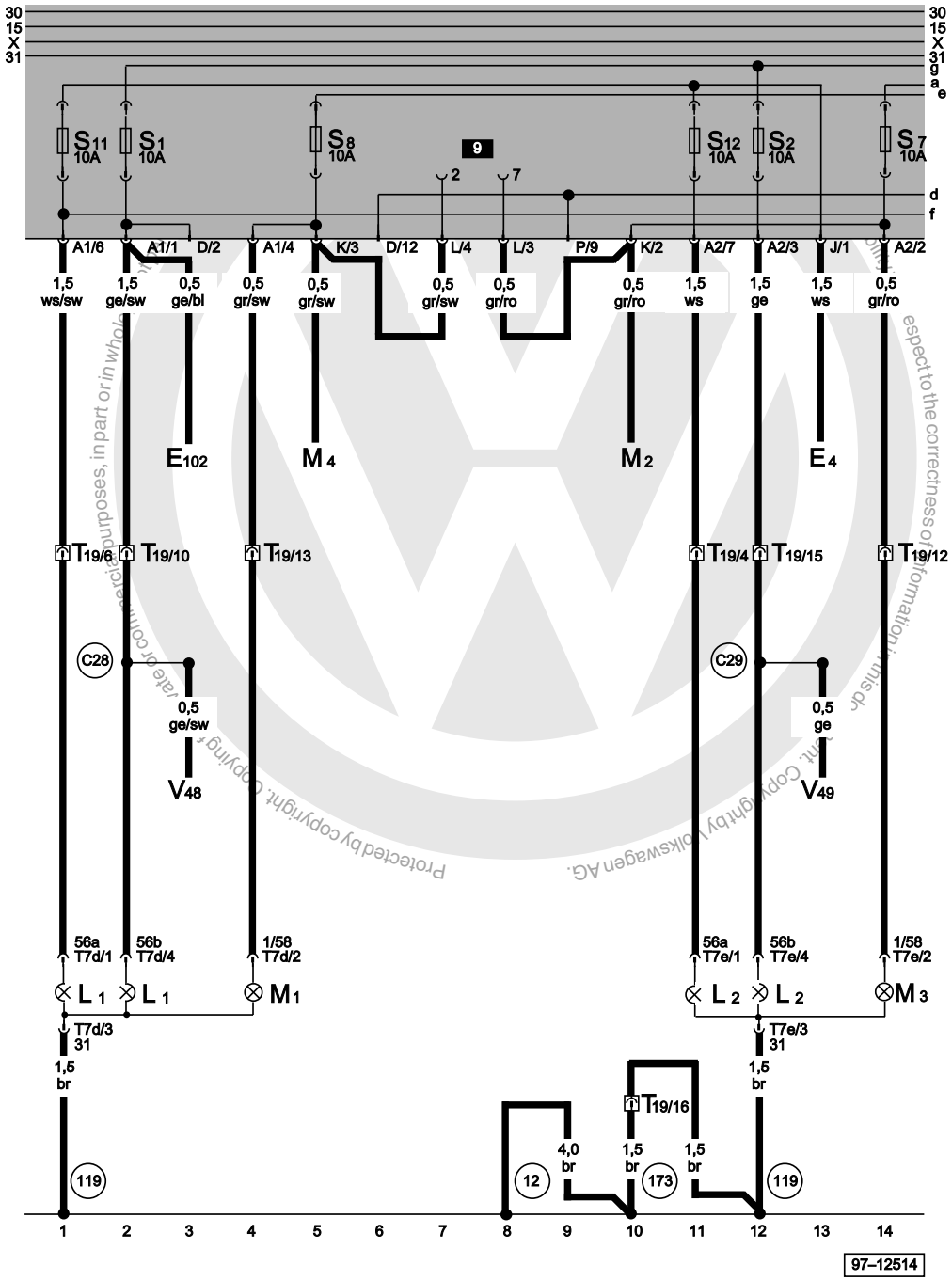

Headlights, side light

E4	Headlight dipper/flasher switch
E102	Headlight range control adjuster
L1	Twin filament bulb/sealed beam insert, left
L2	Twin filament bulb/sealed beam insert, right
M1	Side light bulb, left
M2	Tail light bulb, right
M3	Side light bulb, right
M4	Tail light bulb, left
T7d	7-pin connector, left behind headlight
T7e	7-pin connector, right behind headlight
T19	19-pin connector, left near radiator
V48	Headlight range control motor, left
V49	Headlight range control motor, right
12	Earth point, left in engine compartment, under battery
119	Earth connection -1-, in headlight wiring harness
173	Earth connection -1-, in Mono- Motronic wiring harness
C28	Connection -1- (56b), in headlight wiring harness
C29	Connection -2- (56b), in headlight wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
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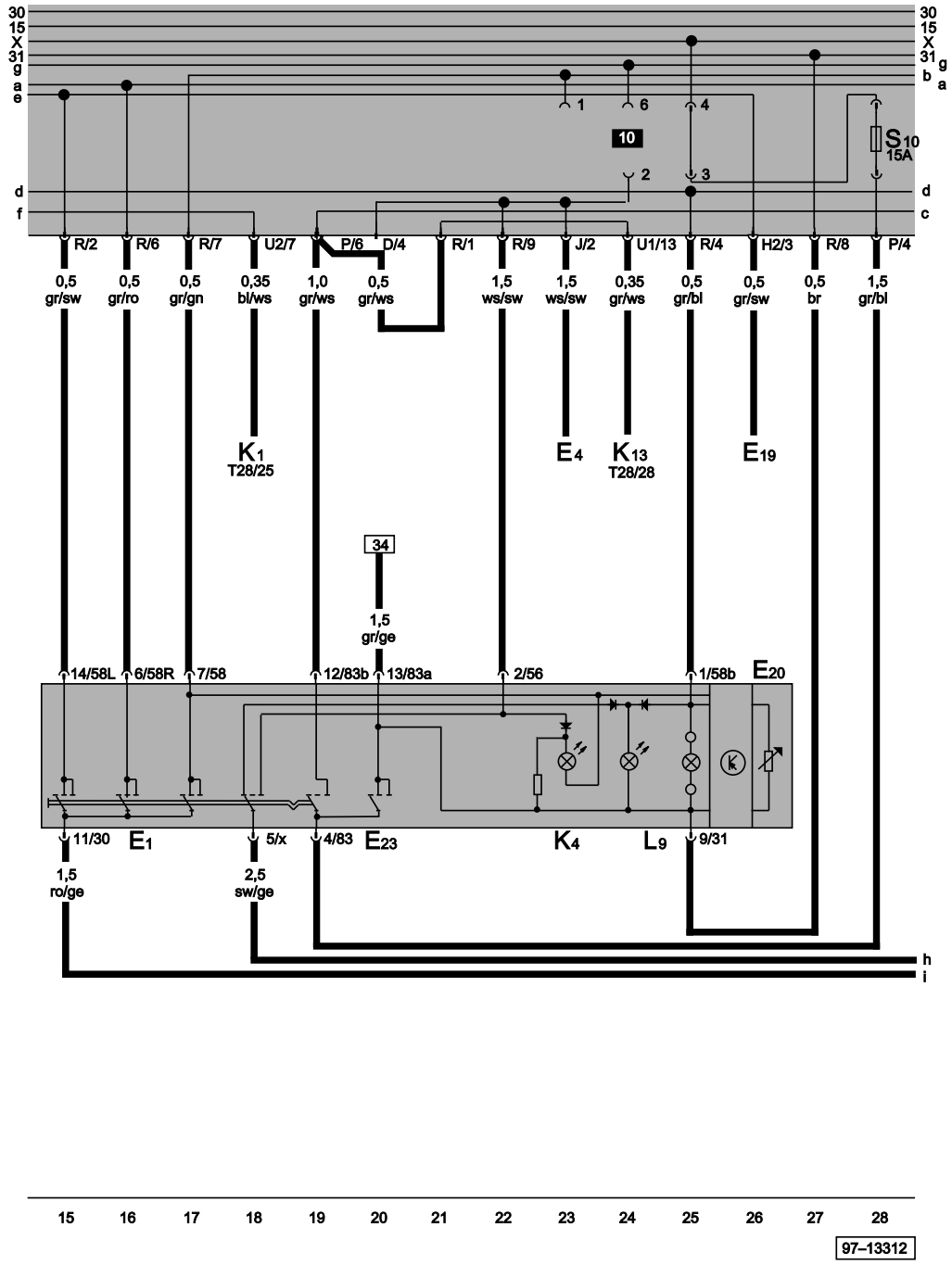

Lighting switch

E1	Lighting switch
E4	Headlight dipper/flasher switch
E19	Parking light switch
E20	Switches and instruments - lighting control
E23	Front and rear fog light switch
K1	Main beam warning lamp
K4	Side light warning lamp
K13	Rear fog light warning lamp
L9	Lighting switch light bulb
T28	28-pin connector, on dash panel insert

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
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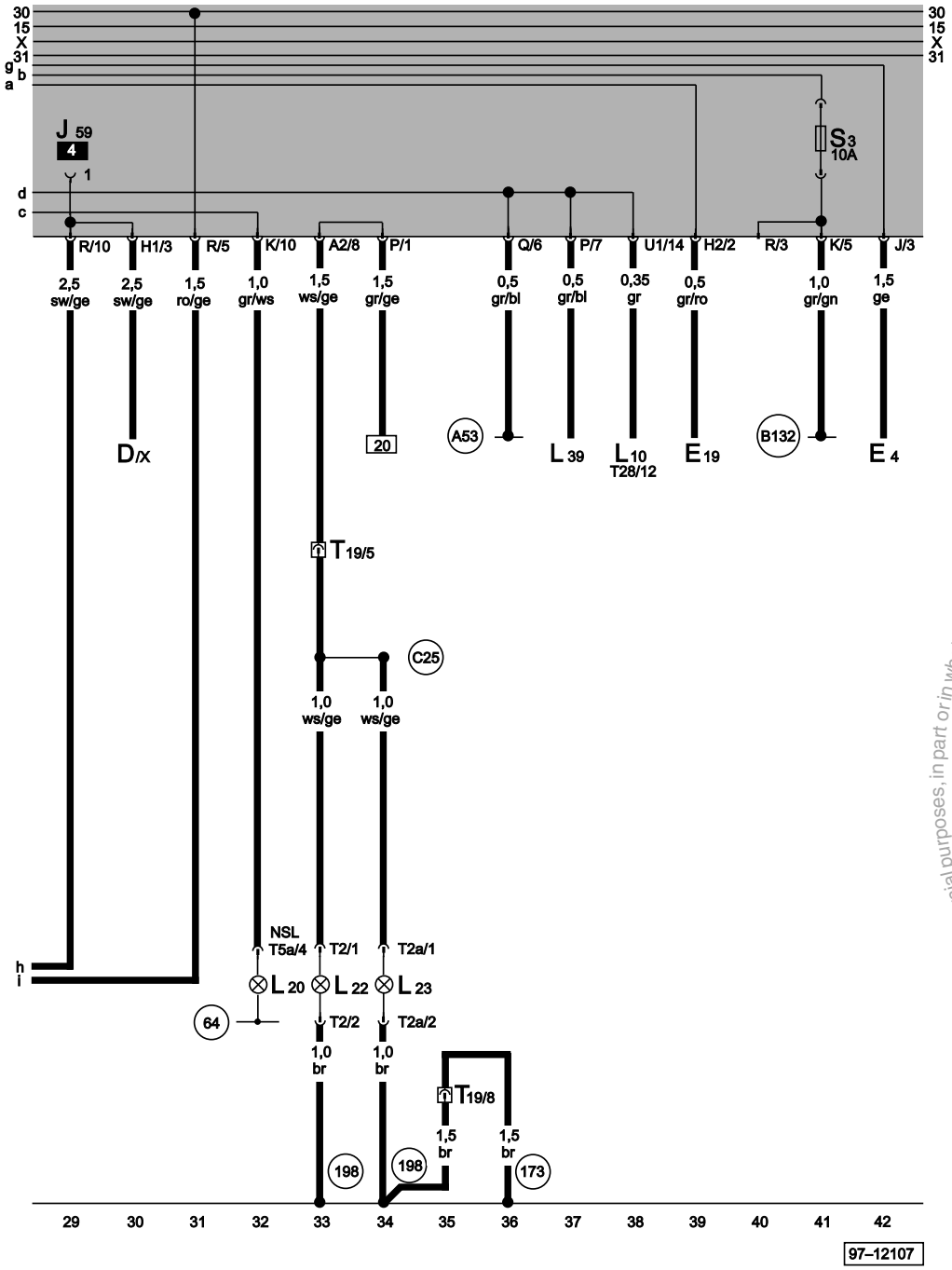

Front and rear fog lights

D	Ignition/starter switch
E4	Headlight dipper/flasher switch
E19	Parking light switch
J59	X contact relief relay
L10	Dash panel insert light bulb
L20	Rear foglight bulb
L22	Fog light bulb, left
L23	Fog light bulb, right
L39	Heated rear window switch bulb
T2	2-pin connector, left on fog light
T2a	2-pin connector, right on fog light
T5a	5-pin connector, right on tail light
T19	19-pin connector, left near radiator
64	Earth point, right tail light bulb holder
173	Earth connection -1-, in Mono- Motronic wiring harness
198	Earth connection, in front lighting wiring harness
A53	Positive connection (58b), in dash panel wiring harness
B132	Connection (number plate lights), in interior wiring harness
C25	Connection (fog light), in front lighting wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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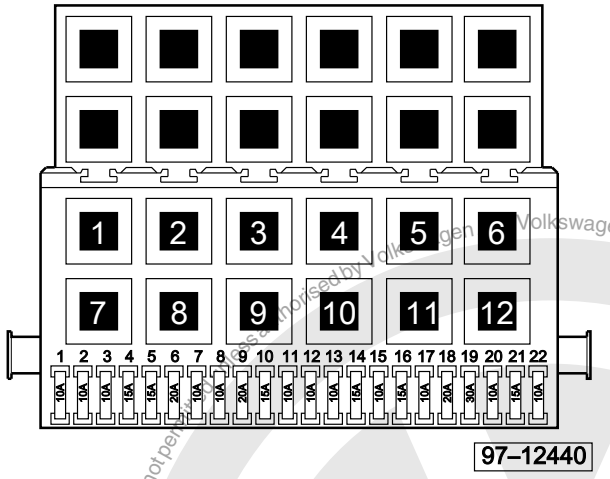
Air conditioning system

⇒ **1.6 ltr./55 kW Mono-Motronic, engine code AEA, (with manual gearbox)**

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



1 - Air conditioner relay (147)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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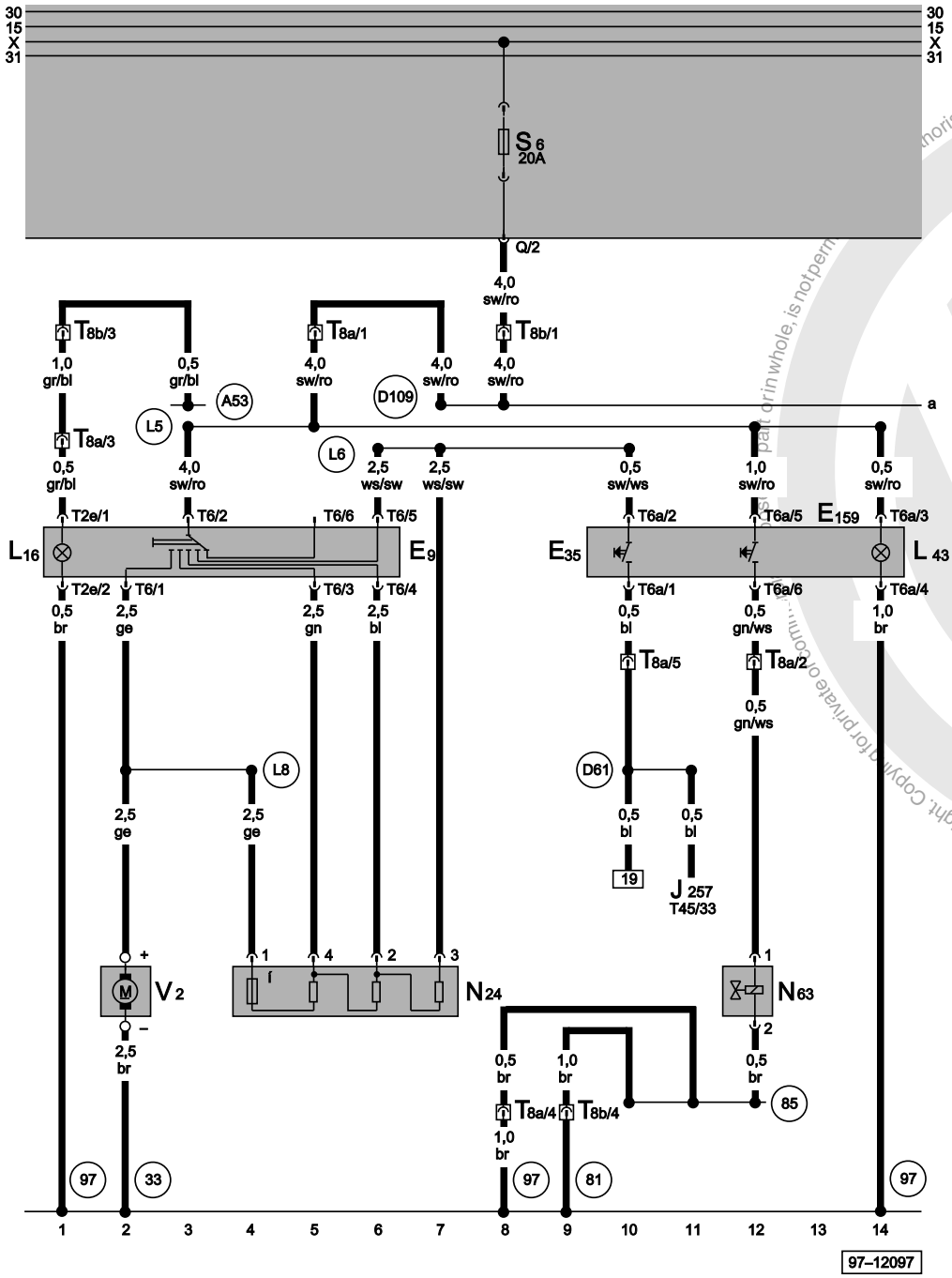

Fresh air blower switch, air conditioner switch, fresh air and air recirculation switch

E9	Fresh air blower switch
E35	Air conditioner switch
E159	Fresh air and air recirculation switch
J257	Mono-Motronic control unit, centre in plenum chamber
L16	Fresh air controls light bulb
L43	Air conditioning system switch light bulb
N24	Fresh air blower with overheating fuse series resistor
N63	Fresh and recirculation air flap two-way valve
T8a	8-pin connector, left behind console
T8b	8-pin connector, left behind console
T45	45-pin connector, on Mono-Motronic control unit
V2	Fresh air blower
33	Earth point, behind dash panel, right
81	Earth connection -1-, in dash panel wiring harness
85	Earth connection -1-, in engine compartment wiring harness
97	Earth connection -1-, in air conditioner wiring harness
A53	Positive connection (58b), in dash panel wiring harness
D61	Connection (air conditioner), in engine compartment wiring harness
D109	Connection -7-, in engine compartment wiring harness
L5	Connection -1-, in evaporator housing unit wiring harness
L6	Connection -2-, in evaporator housing unit wiring harness
L8	Connection -4-, in evaporator housing unit wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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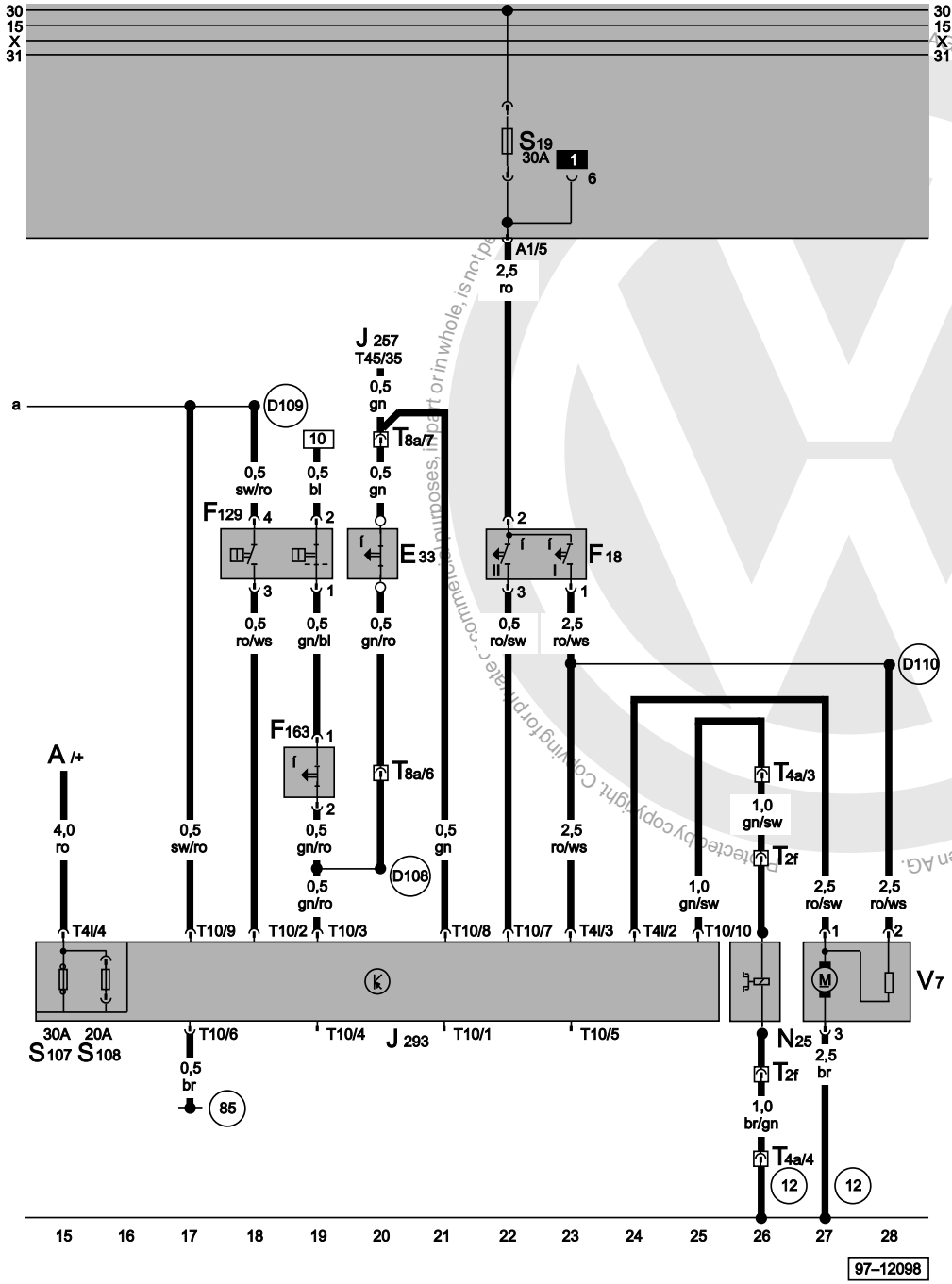

Air conditioner pressure switch, idling speed boost, radiator fan control unit, air conditioner cut-off, radiator fan

A	Battery
E33	Temperature switch for evaporator
F18	Radiator fan thermo-switch
F129	Air conditioner pressure switch
F163	Air conditioner shut-off thermo-switch, centre in engine compartment
J257	Mono-Motronic control unit
J293	Radiator fan control unit, left in engine compartment
N25	Air conditioning system magnetic coupling
S107	Radiator fan fuse, 2nd speed
S108	Radiator fan 1st speed and magnetic coupling fuse
T2f	2-pin connector, near compressor
T4a	4-pin connector, on gearbox
T4l	4-pin connector, on radiator fan control unit
T8a	8-pin connector, left behind console
T10	10-pin connector, on radiator fan control unit
T45	45-pin connector, on Mono-Motronic control unit
V7	Radiator fan
12	Earth point, in engine compartment, left
85	Earth connection -1-, in engine compartment wiring harness
D108	Connection -6-, in engine compartment wiring harness
D109	Connection -7-, in engine compartment wiring harness
D110	Connection -8-, in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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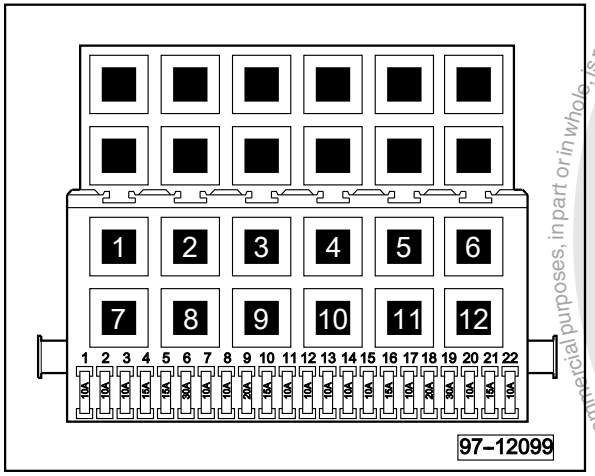
Central locking system

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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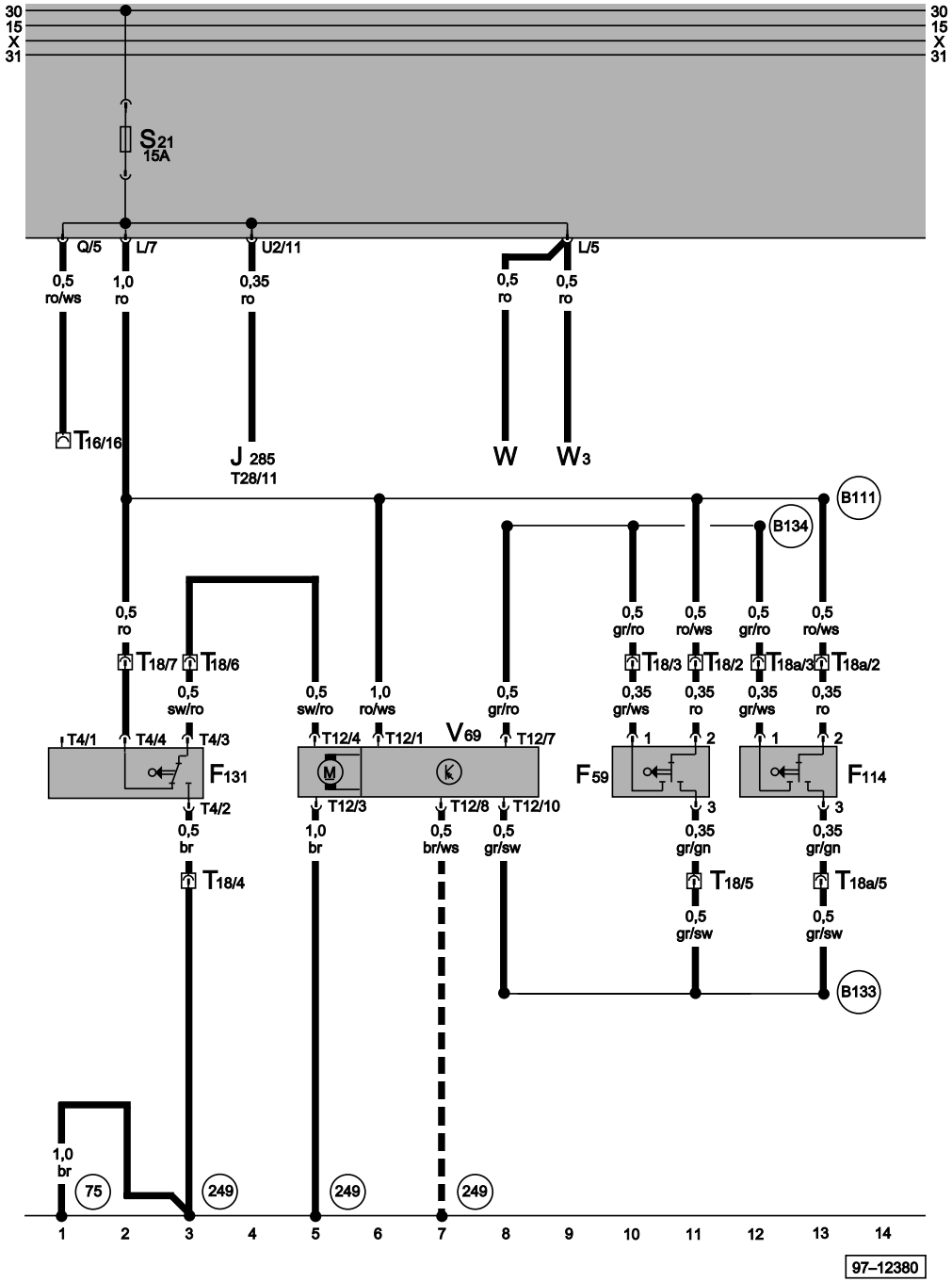

Pump with control unit for central locking, central locking switch, central locking actuators

F59	Central locking switch (driver's side)
F114	Central locking switch (front passenger's side)
F131	Central locking actuator, front left
J285	Control unit with display in dash panel insert
T4	4-pin connector, on central locking positioner
T12	12-pin connector, on central locking control unit
T16	16-pin connector, behind shelf driver's side, - Self-diagnosis connection for V.A.G 1551 -
T18	18-pin connector, left on lower A-pillar
T18a	18-pin connector, right on lower A-pillar
T28	28-pin connector, on dash panel insert
V69	Central locking pump with control unit
W	Interior light, front
W3	Luggage compartment light
75	Earth point, rear pillar, right
249	Earth connection -2-, in interior wiring harness
B111	Positive connection -1- (30a), in interior wiring harness
B133	Connection (central locking open), in interior wiring harness
B134	Connection (central locking closed), in interior wiring harness
---	Cut through for single door opening function

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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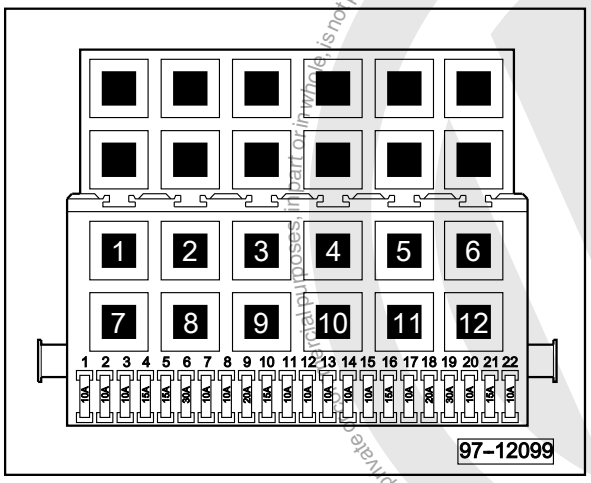
Window lifter, front

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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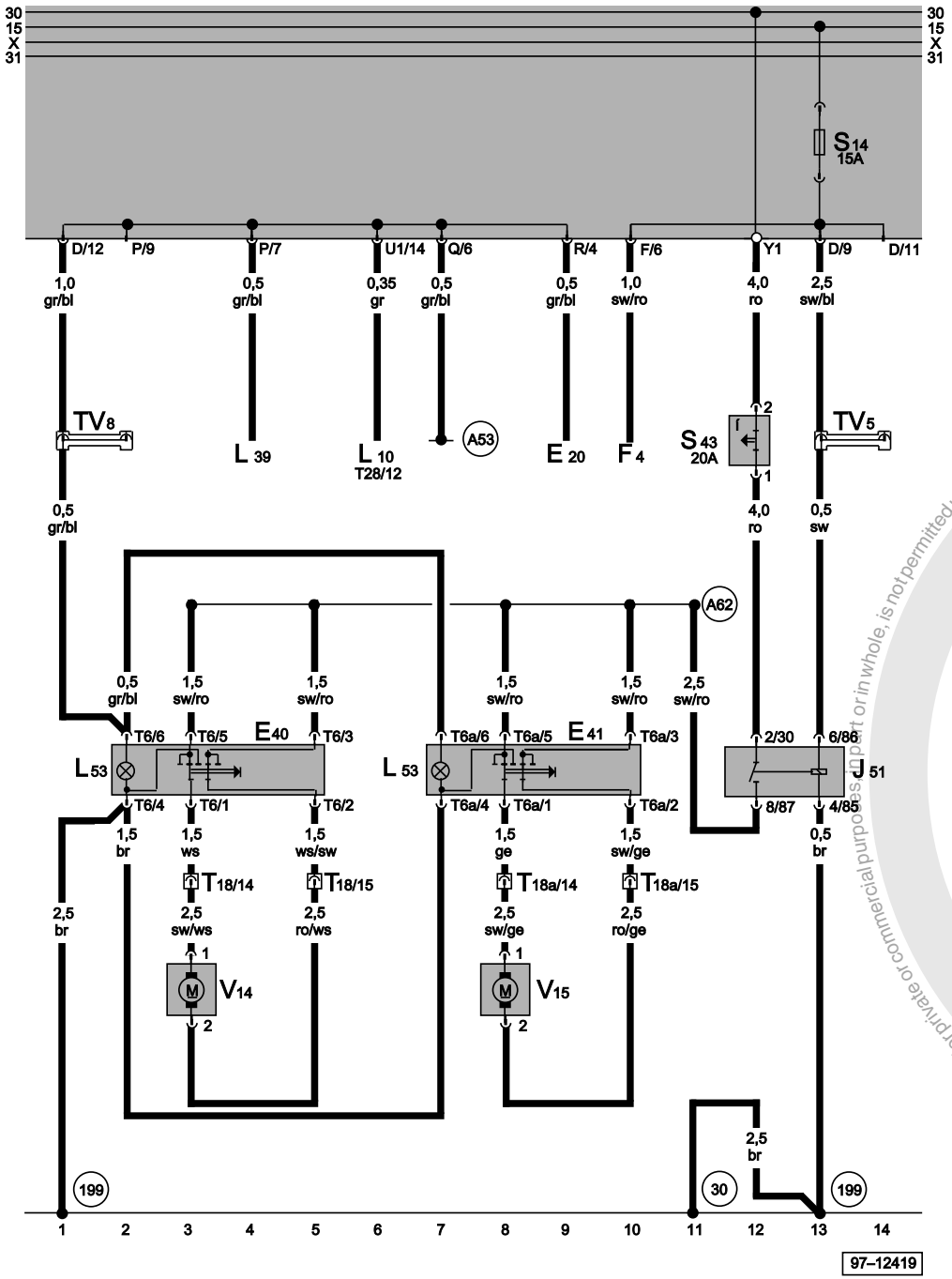

Window lifter, front

E20	Switches and instruments - lighting control
E40	Front left electric window switch
E41	Electric window switch, front right
F4	Reversing light switch
J51	Window lifter relay
L10	Dash panel insert light bulb
L39	Heated rear window switch bulb
L53	Electric window switch light bulb
S43	Window lifter thermo fuse
T6	6-pin connector, front left electric window switch
T6a	6-pin connector, front right on window lifter switch
T18	18-pin connector, left on lower A-pillar
T18a	18-pin connector, right on lower A pillar
T28	28-pin connector, on dash panel insert
TV5	Terminal 15a junction box
TV8	Terminal 58b junction box
V14	Window lifter motor, left
V15	Window lifter motor, right
30	Earth point -1-, next to relay plate
199	Earth connection -3-, in dash panel wiring harness
A53	Positive connection (58b), in dash panel wiring harness
A62	Connection (electric windows), in dash panel wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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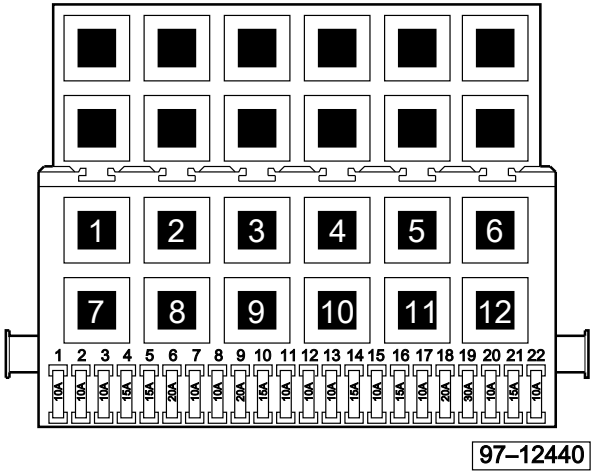
Exterior mirror, heated and adjustable

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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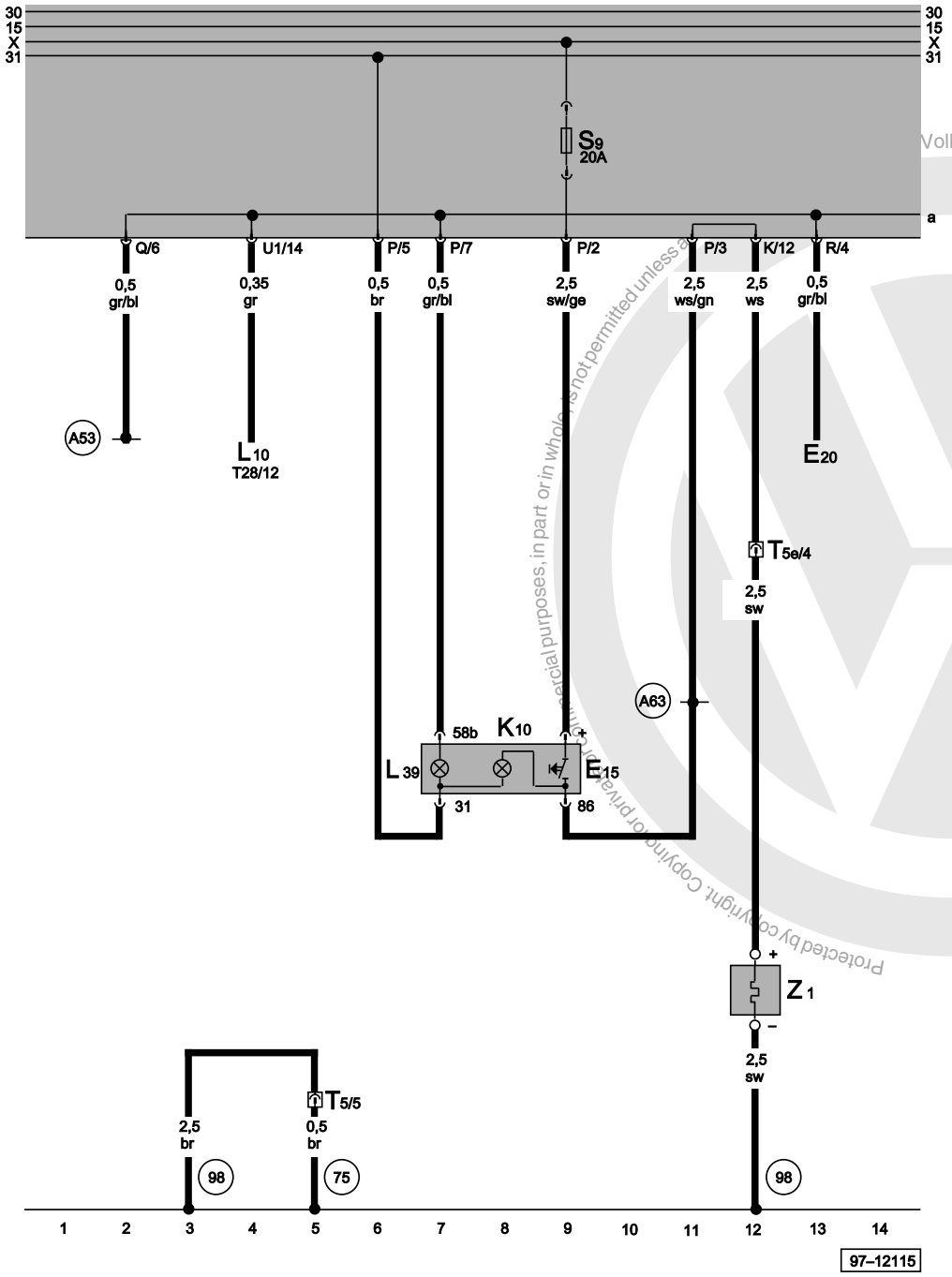

Heated rear window switch, heated rear window

E15	Heated rear window switch
E20	Switches and instruments - lighting control
K10	Heated rear window warning lamp
L10	Dash panel insert light bulb
L39	Heated rear window switch bulb
T5	5-pin connector, in tailgate/boot lid
T5e	5-pin connector, left behind C-pillar trim
T28	28-pin connector, on dash panel insert
Z1	Heated rear window
75	Earth point, rear pillar, right
98	Earth connection, in tailgate/boot lid wiring harness
A53	Positive connection (58b), in dash panel wiring harness
A63	Connection (mirror adjustment/heating) in dash panel harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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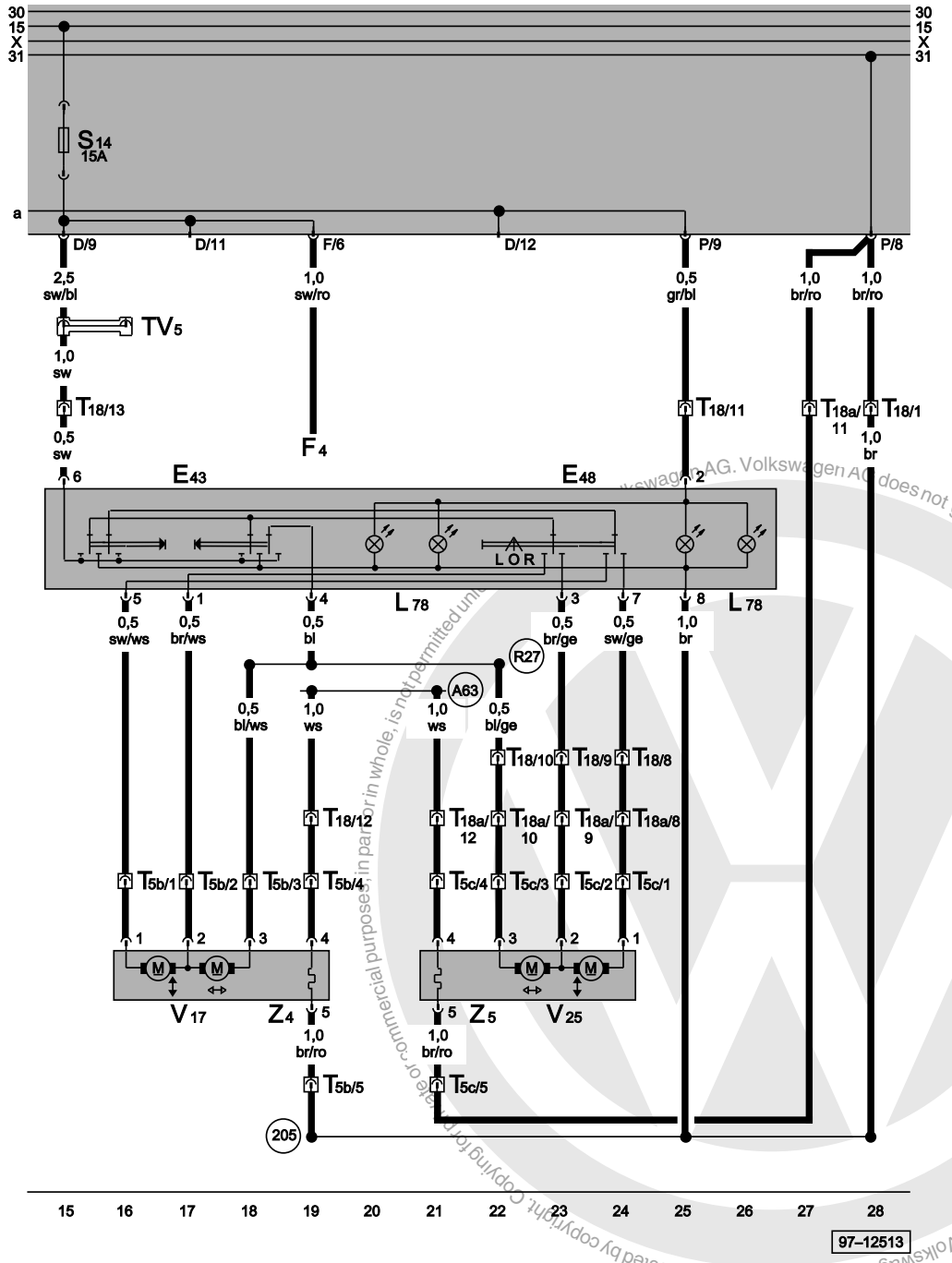

Mirror adjustment switch, mirror adjustment motor, heated exterior mirror

E43	Mirror adjustment switch
E48	Mirror adjustment change-over switch
F4	Reversing light switch
L78	Mirror adjustment switch illumination
T5	5-pin connector, in driver's door
T5	5-pin connector, front passenger's door
T18	18-pin connector, left on lower A-pillar
T18a	18-pin connector, right on lower A-pillar
TV5	Terminal 15a junction box
V17	Mirror adjustment motor, driver's side
V25	Mirror adjustment motor, front passenger's side
Z4	Heated exterior mirror, driver's side
Z5	Heated exterior mirror, front passenger's side
205	Earth connection, in driver's door wiring harness
A63	Connection (mirror adjustment/heating) in dash panel harness
R27	Connection (mirror adjustment), in driver's door wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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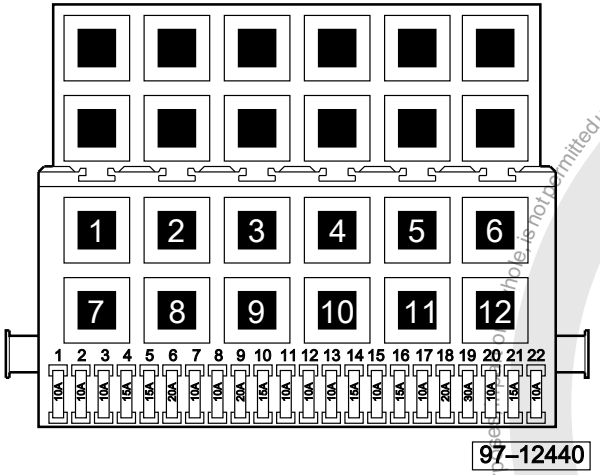
Seat heating, driver's and passenger side

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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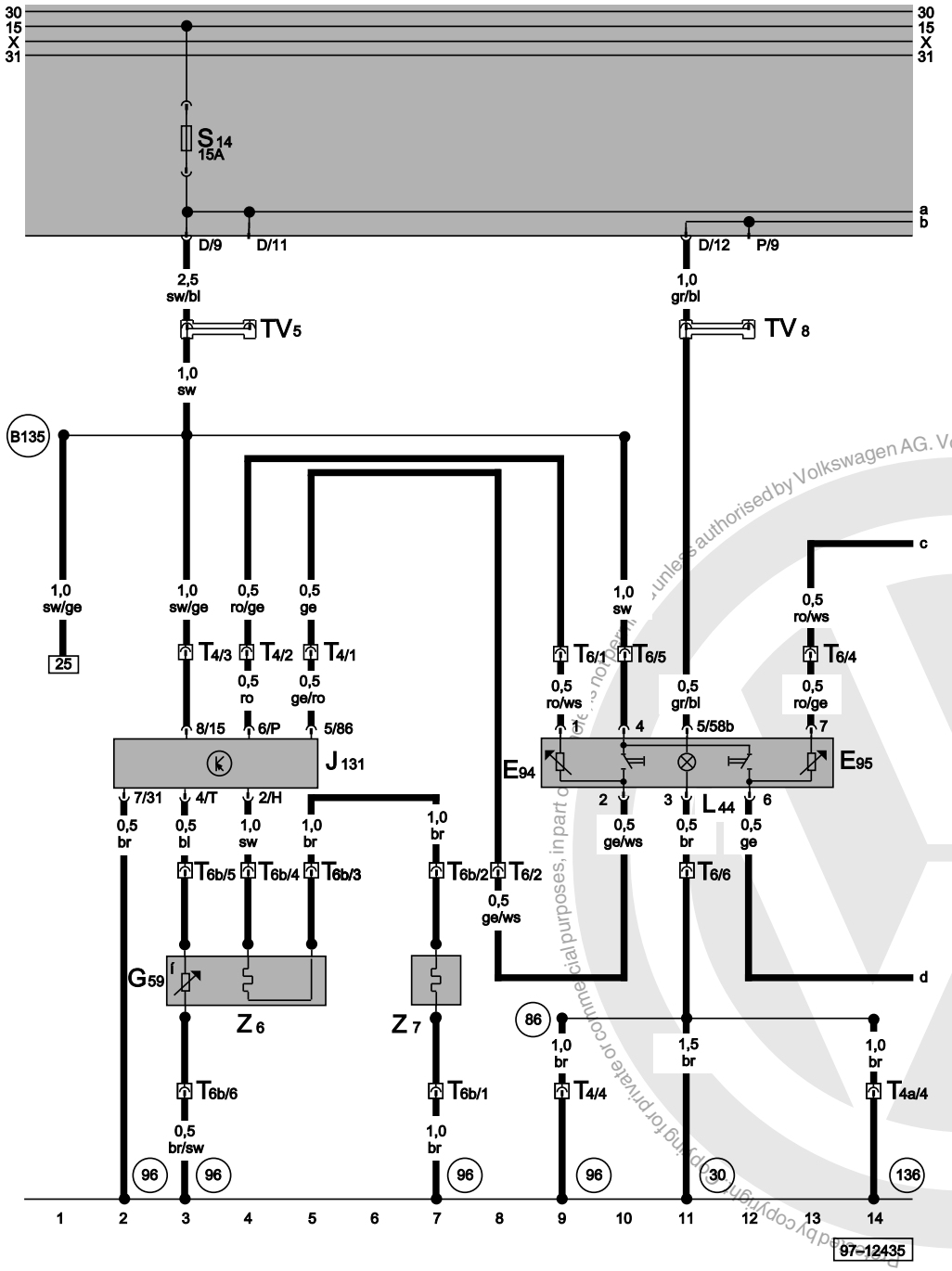
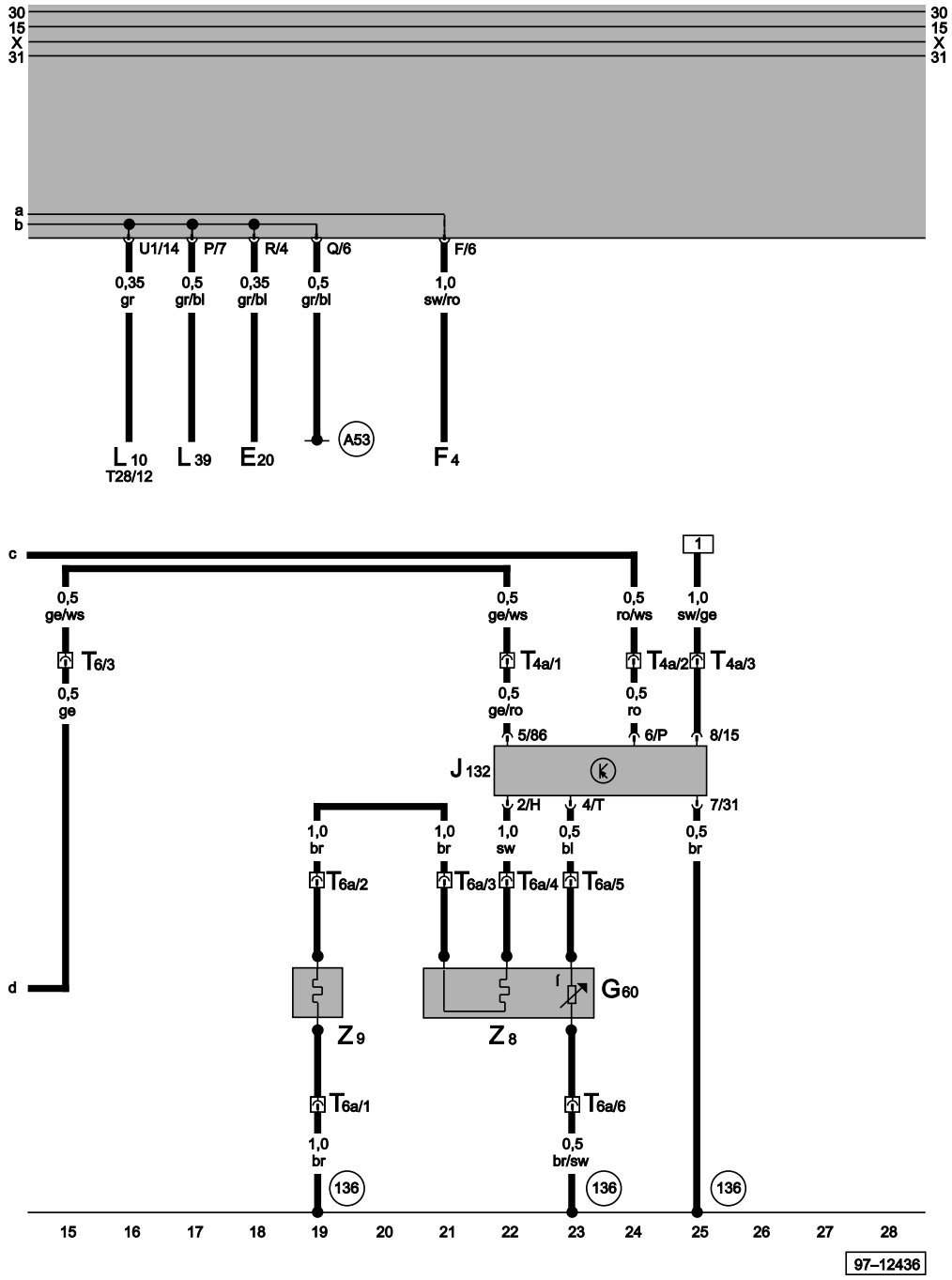


Driver's seat heating

E94	Heated driver seat adjuster
E95	Heated front passenger seat adjuster
G59	Driver's seat temperature sensor
J131	Heated driver's seat control unit, under driver's seat
L44	Seat heating switch light bulb
T4a	4-pin connector, under driver's seat
T4a	4-pin connector, under front passenger's seat
T6	6-pin connector, behind relay plate
T6b	6-pin connector, under driver's seat
TV5	Terminal 15a junction box, above the relay plate
TV8	Terminal 58b junction box, above the relay plate
Z6	Heated driver's seat
Z7	Heated driver's seat backrest
30	Earth point -1-, next to relay plate
86	Earth connection -1-, in rear wiring harness
96	Earth connection -1-, in seat heating wiring harness
136	Earth connection -2-, in seat heating wiring harness
B135	Connection (15a), in interior wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li = purple
ge = yellow
or = orange
rs = pink

satelettronica



Front passenger's seat heating

E20	Switches and instruments - lighting control
F4	Reversing light switch
G60	Front passenger`s seat temperature sensor
J132	Heated front passenger's seat control unit, under front passenger's seat
L10	Dash panel insert light bulb
L39	Heated rear window switch bulb
T4b	4-pin connector, under front passenger's seat
T6	6-pin connector, behind relay plate
T6a	6a-pin connector, under front passenger's seat
T28	28-pin connector, on dash panel insert
Z8	Heated front passenger's seat
Z9	Heated front passenger seat brackrest
136	Earth connection -2-, in seat heating wiring harness
A53	Positive connection (58b), in dash panel wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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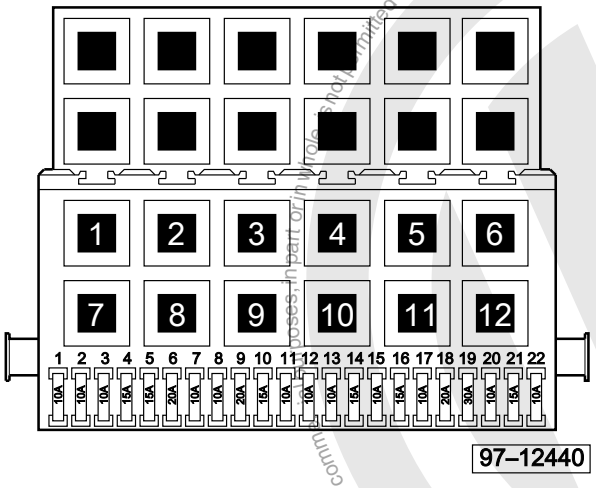
Headlight washer system

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



7 - Headlight washer system relay (33)
8 - Automatic intermittent wash/wipe relay (19)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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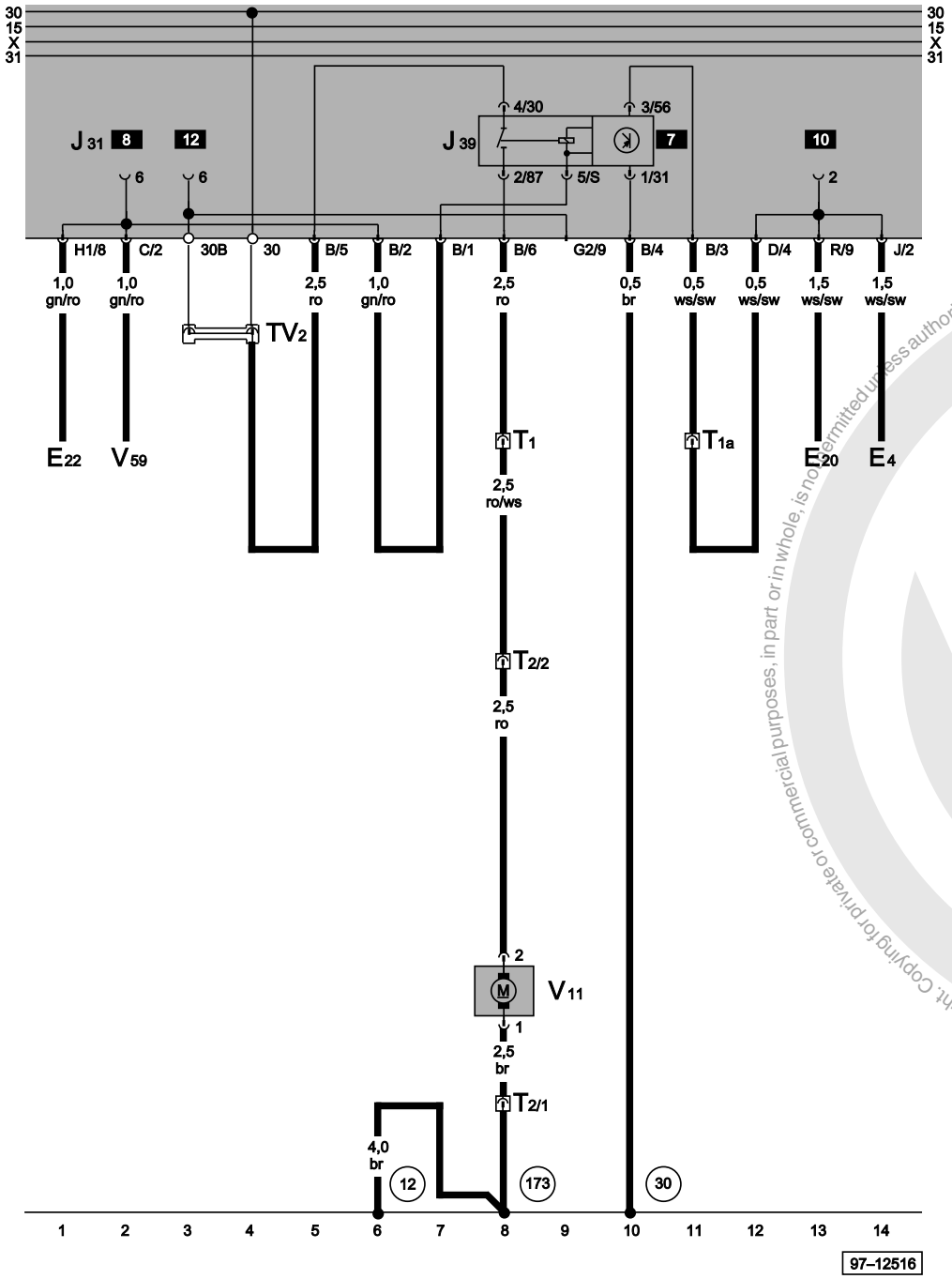

Headlight washer system

E4	Headlight dipper/flasher switch
E20	Switches and instruments - lighting control
E22	Intermittent wiper switch
J31	Automatic intermittent wash/wipe relay
J39	Headlight washer system relay
T1	Single connector, behind relay plate
T1a	Single connector, behind relay plate
T2	Single connector, near headlight washer pump
TV2	Terminal 30 junction box
V11	Headlight washer pump
V59	Windscreen and rear window washer pump
12	Earth point, left in engine compartment, underbattery
30	Earth point -1-, next to relay plate
173	Earth connection -1-, in Mono- Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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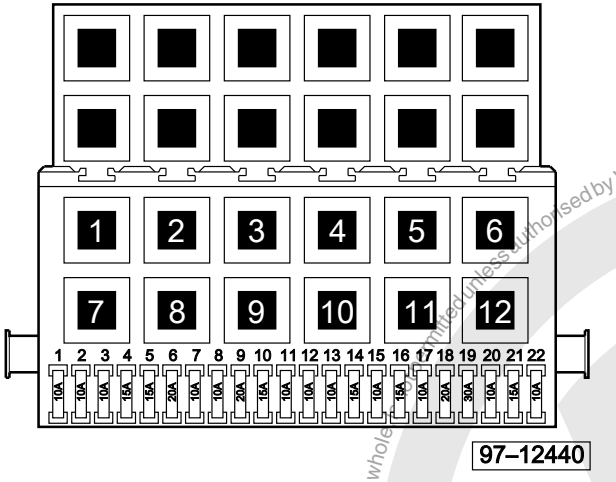
Daylight driving lights and headlight washer system

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



4 - X contact relief relay (18)
7 - Headlight washer system relay (33)
8 - Automatic intermittent wash/wipe relay (19)
9 - Lights on warning buzzer (36)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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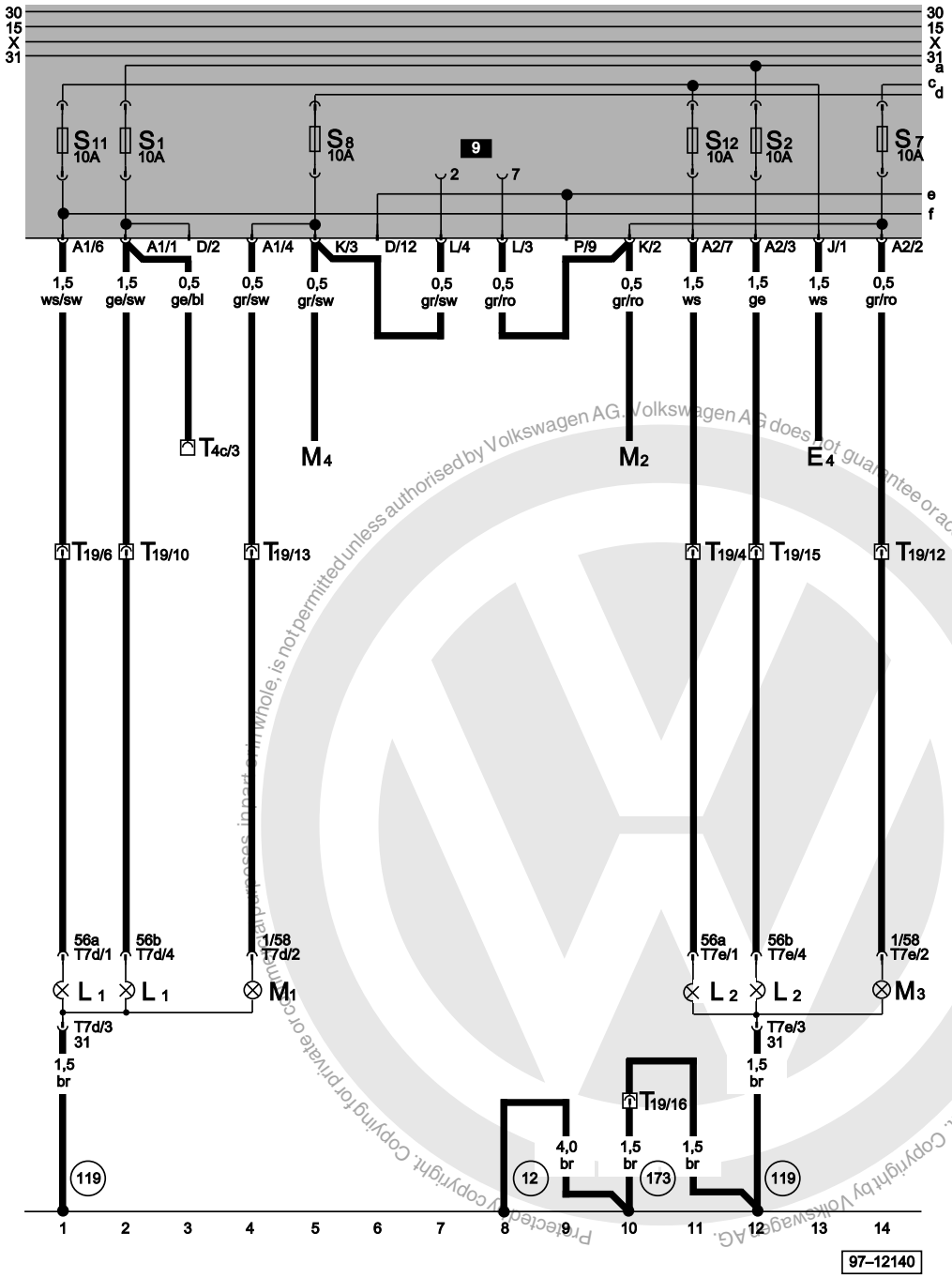

Headlights, side light

E4	Headlight dipper/flasher switch
L1	Twin filament bulb/sealed beam insert, left
L2	Twin filament bulb/sealed beam insert, right
M1	Side light bulb, left
M2	Tail light bulb, right
M3	Side light bulb, right
M4	Tail light bulb, left
T4c	4-pin connector, behind relay plate
T7d	7-pin connector, behind left headlight
T7e	7-pin connector, right behind headlights
T19	19-pin connector, left near radiator
12	Earth point, left in engine compartment, under battery
119	Earth connection -1-, in left headlight wiring harness
173	Earth connection -1-, in Mono- Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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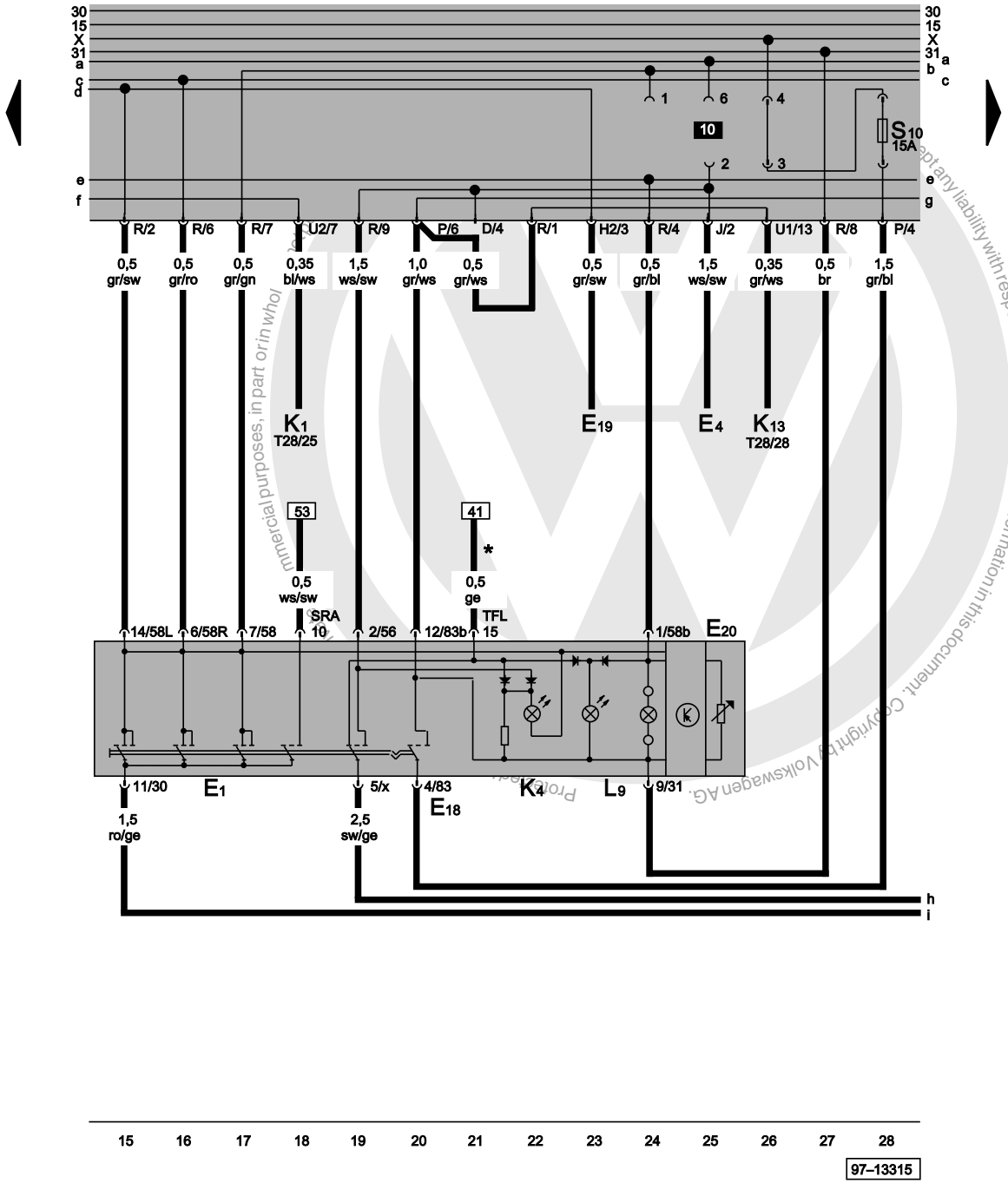
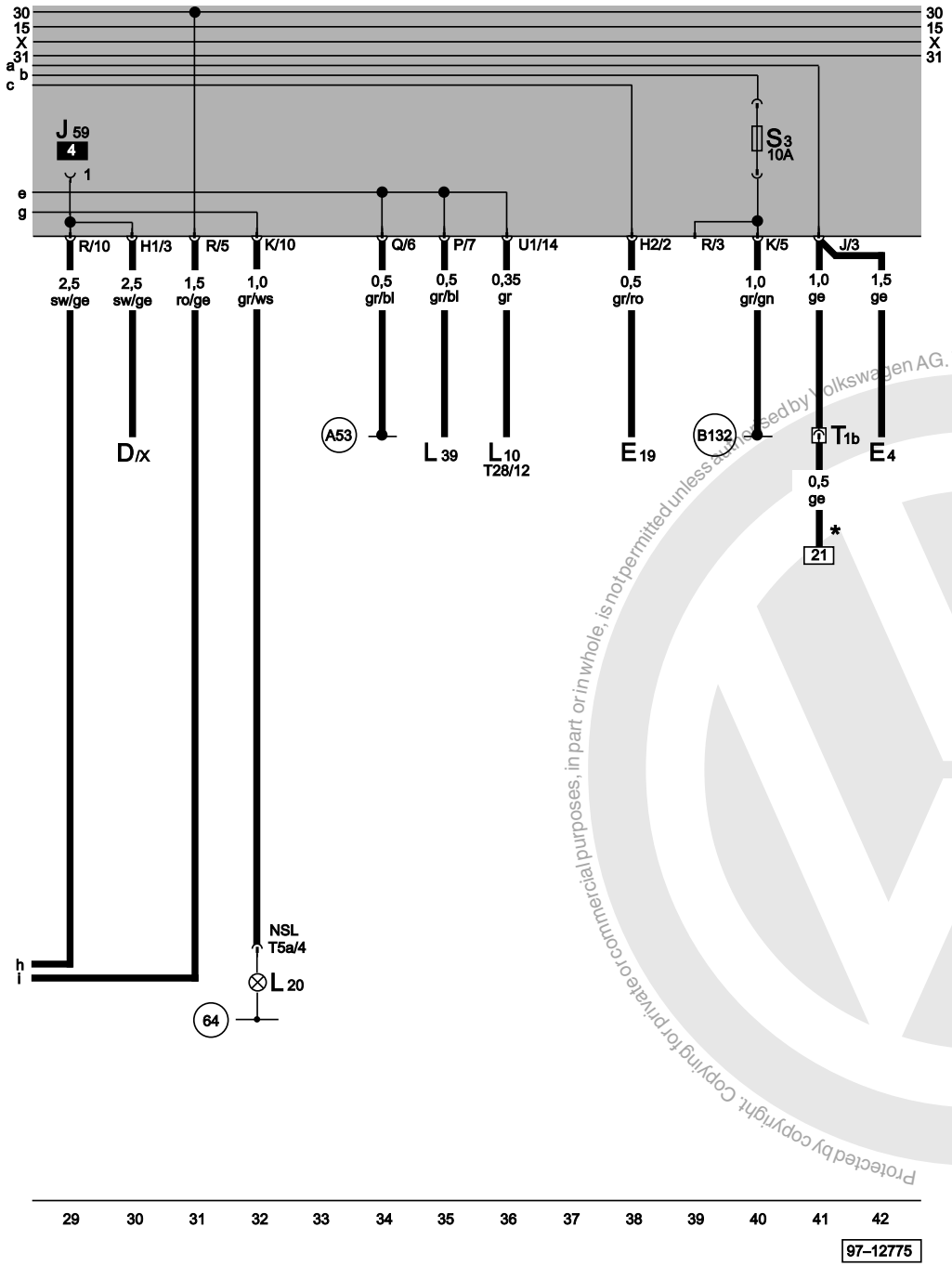


Lighting switch

E1	Lighting switch
E4	Headlight dipper/flasher switch
E18	Rear fog light switch
E19	Parking light switch
E20	Switches and instruments - lighting control
K1	Main beam warning lamp
K4	Side light warning lamp
K13	Rear fog light warning lamp
L9	Lighting switch light bulb
T28	28-pin connector, on dash panel insert
*	Resistance wire

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

satelettronica



Headlight dipper/flasher switch, parking light switch, rear fog light

D	Ignition/starter switch
E4	Headlight dipper/flasher switch
E19	Parking light switch
J59	X contact relief relay
L10	Dash panel insert light bulb
L20	Rear foglight bulb
L39	Heated rear window switch bulb
T1b	Single connector, behind the relay plate
T5a	5-pin connector, right on tail light
T28	28-pin connector, on dash panel insert
64	Earth point, right tail light bulb holder
A53	Positive connection (58b), in dash panel wiring harness
B132	Connection (number plate lights), in interior wiring harness
*	Resistance wire

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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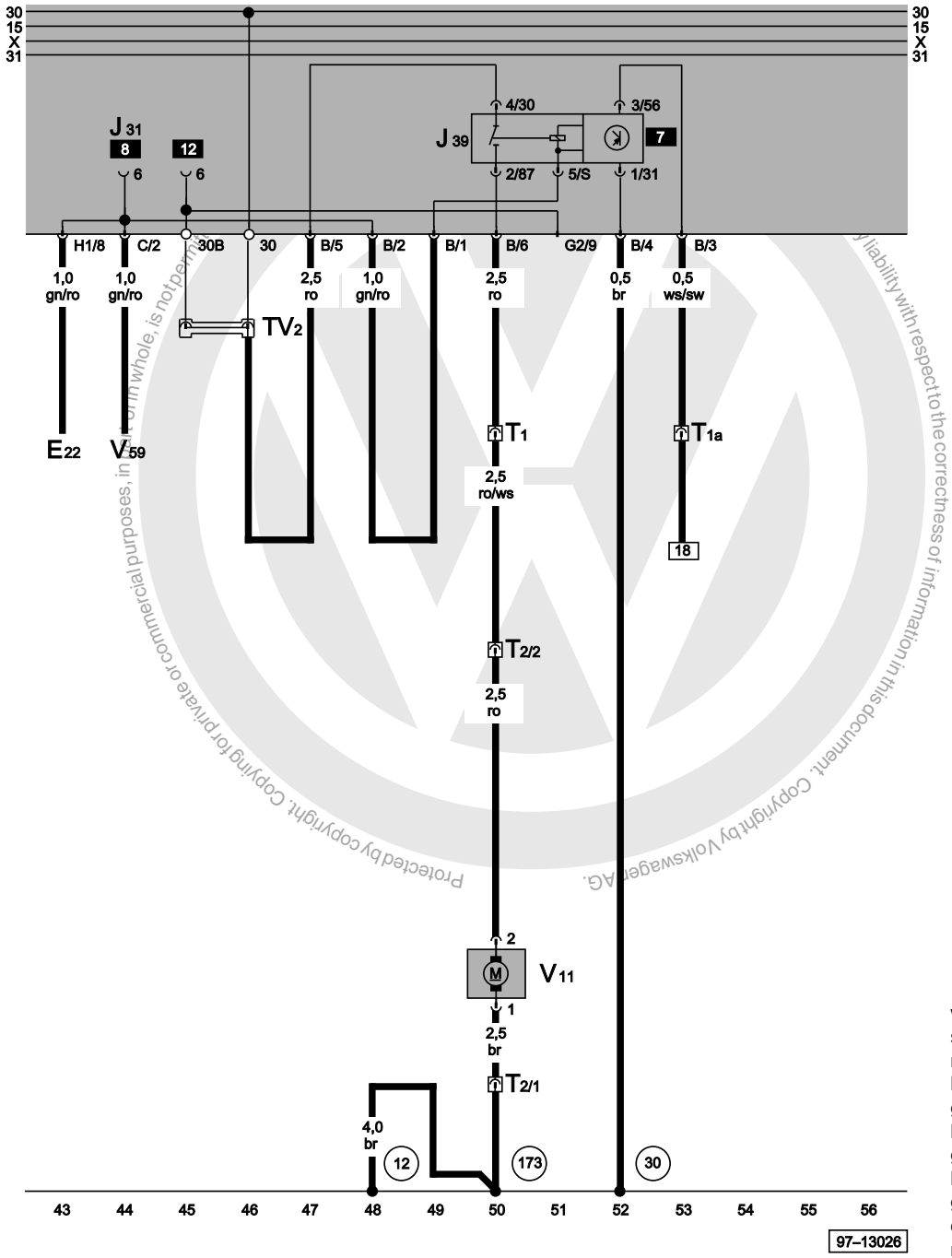

Headlight washer system

E22	Intermittent wiper switch
J31	Automatic intermittent wash/wipe relay
J39	Headlight washer system relay
T1	Single connector, behind the relay plate
T1a	Single connector, behind the relay plate
T2	2-pin connecctor, near headlight washer pump
TV2	Terminal 30 junction box
V11	Headlight washer pump
V59	Windscreen and rear window washer pump
12	Earth point, left in engine compartment, under battery
30	Earth point -1-, next to relay plate
173	Earth connection -1-, in Mono- Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li = purple
ge = yellow
or = orange
rs = pink

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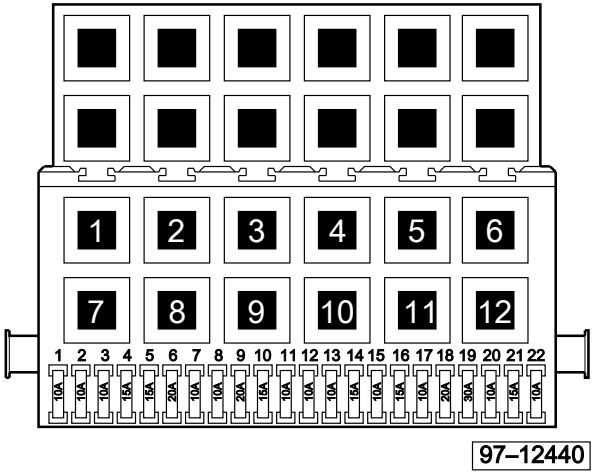
Urban driving lights (Great Britain only)

From October 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



4 - X contact relief relay (18)
9 - Lights on warning buzzer (36)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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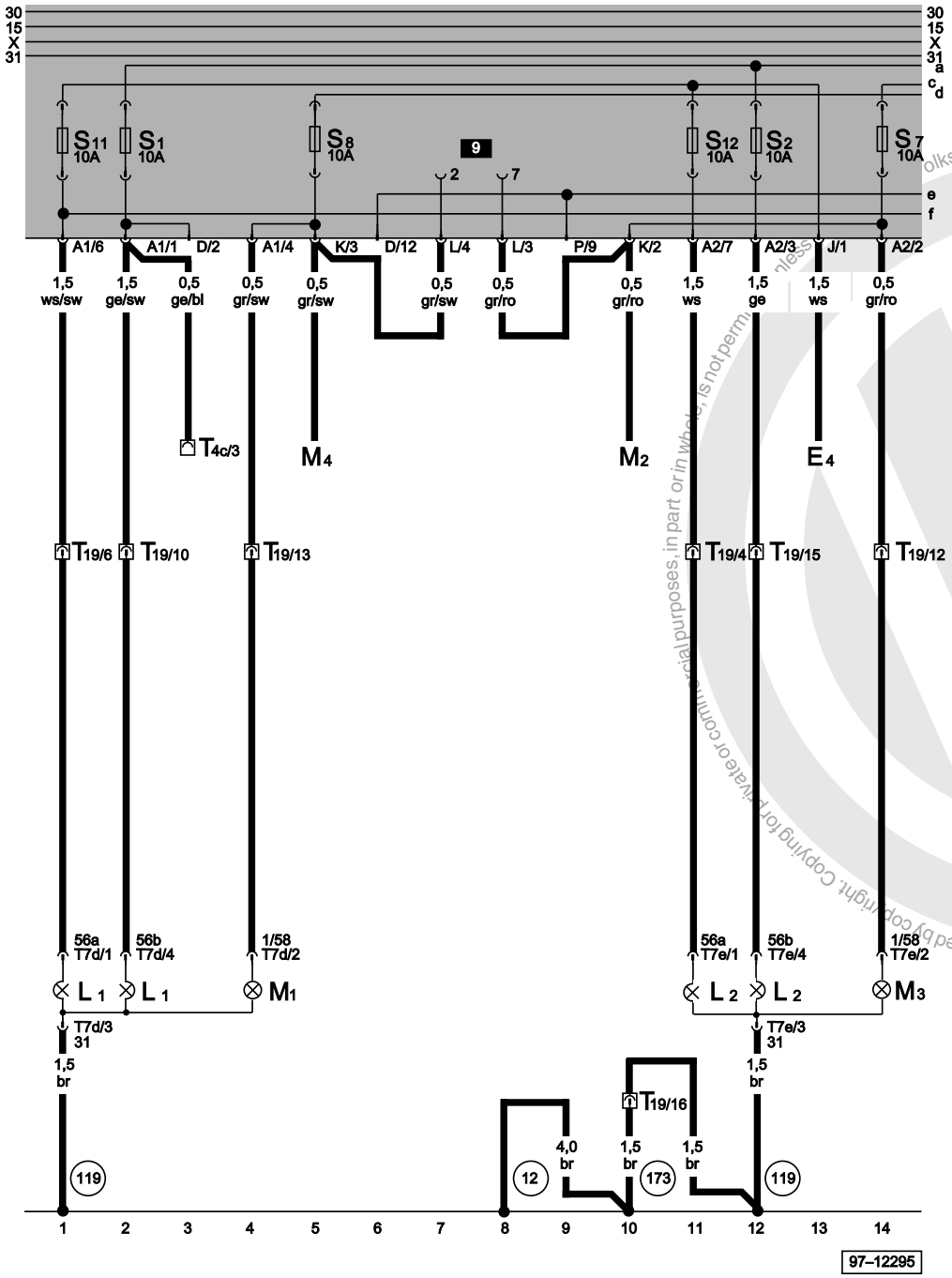

Headlights, side light

E4	Headlight dipper/flasher switch
L1	Twin filament bulb/sealed beam insert, left
L2	Twin filament bulb/sealed beam insert, right
M1	Side light bulb, left
M2	Tail light bulb, right
M3	Side light bulb, right
M4	Tail light bulb, left
T4c	4-pin connector, behind relay plate
T7d	7-pin connector, behind left headlight
T7e	7-pin connector, right behind headlight
T19	19-pin connector, left near radiator
12	Earth point, left in engine compartment, under battery
119	Earth connection -1-, in left headlight wiring harness
173	Earth connection -1-, in Mono- Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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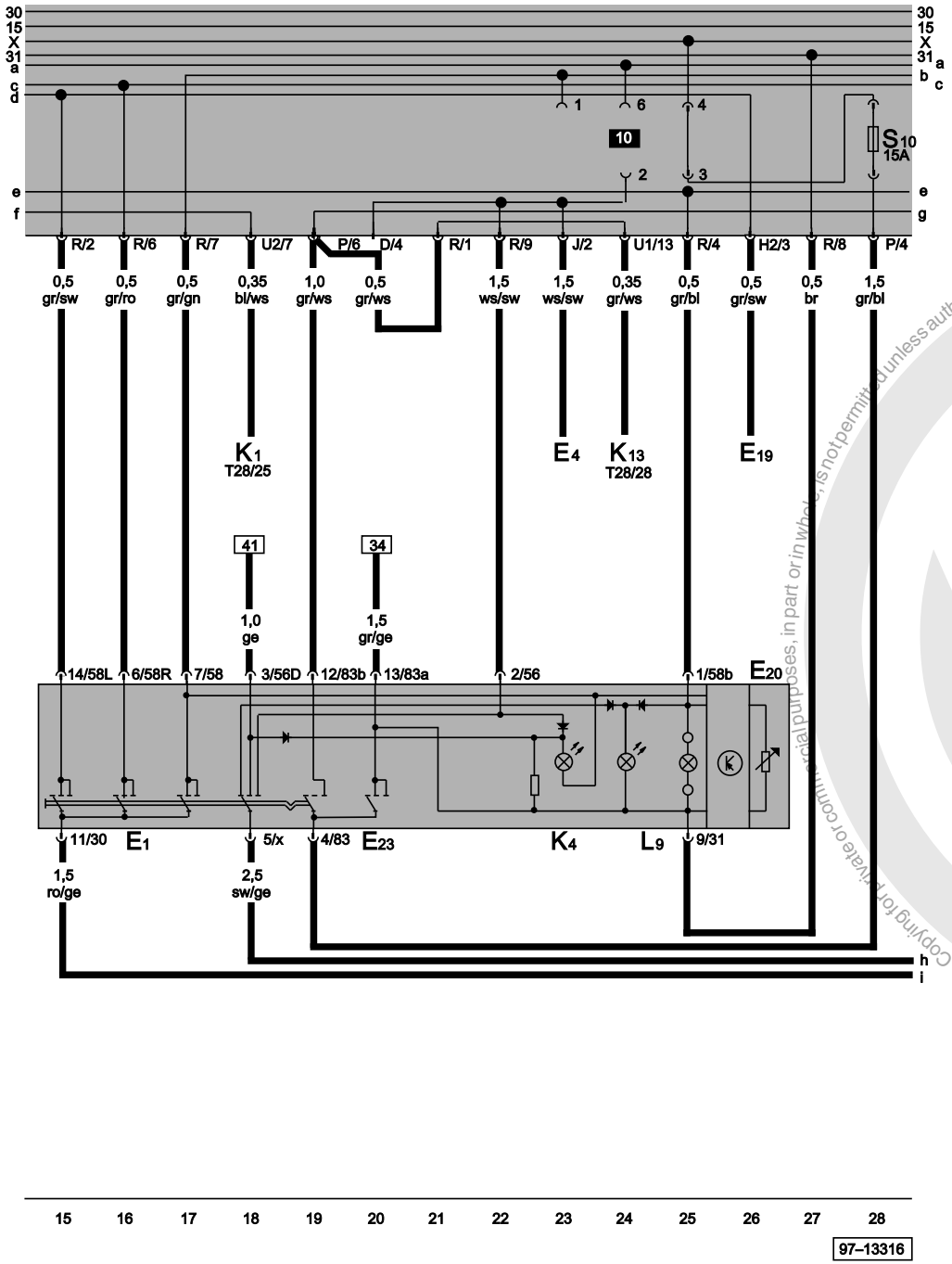

Lighting switch

E1	Lighting switch
E4	Headlight dipper/flasher switch
E19	Parking light switch
E20	Switches and instruments - lighting control
E23	Front and rear fog light switch
K1	Main beam warning lamp
K4	Side light warning lamp
K13	Rear fog light warning lamp
L9	Lighting switch light bulb
T28	28-pin connector, on dash panel insert

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li = purple
ge = yellow
or = orange
rs = pink

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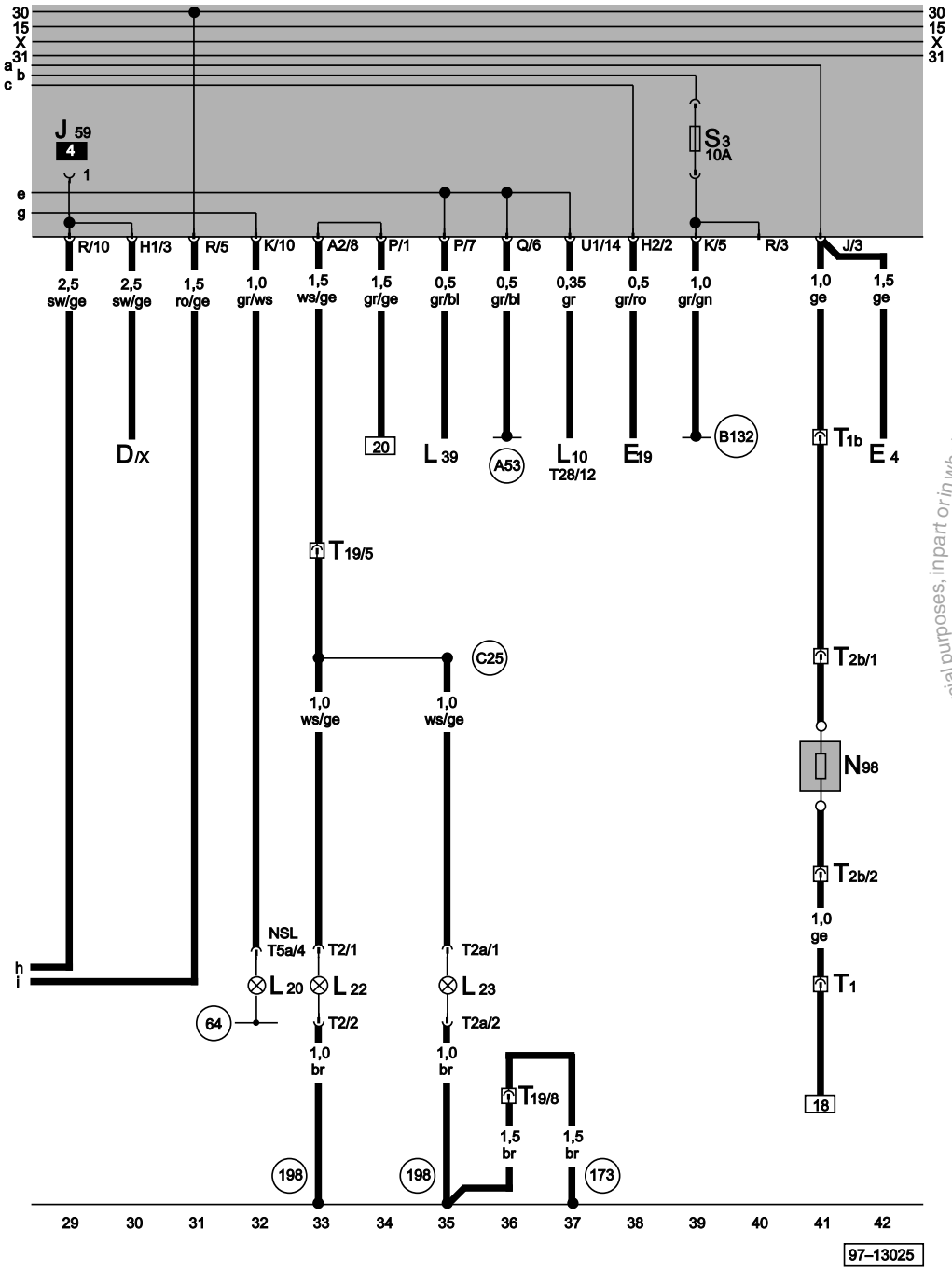

Fog light, rear fog light, Series resistance - town driving lights

D	Ignition/starter switch
E4	Headlight dipper/flasher switch
E19	Parking light switch
J59	X contact relief relay
L10	Dash panel insert light bulb
L20	Rear fog light bulb
L22	Fog light bulb, left
L23	Fog light bulb, right
L39	Heated rear window switch bulb
N98	Town driving lights series resistor
T1	Single connector, in centre behind dash panel
T1b	Single connector, in centre behind dash panel
T2	2-pin connector, on fog light, left
T2a	2-pin connector, on fog light, right
T2b	2-pin connector, near town driving lights series resistance
T5a	5-pin connector, right on tail light
T19	19-pin connector, left near radiator
T28	28-pin connector, on dash panel insert
64	Earth point, right tail light bulb holder
173	Earth connection -1-, in Mono- Motronic wiring harness
198	Earth connection, in front lighting wiring harness
A53	Positive connection (58b), in dash panel wiring harness
B132	Connection (number plate lights), in interior wiring harness
C25	Connection (fog light), in front lighting wiring loom

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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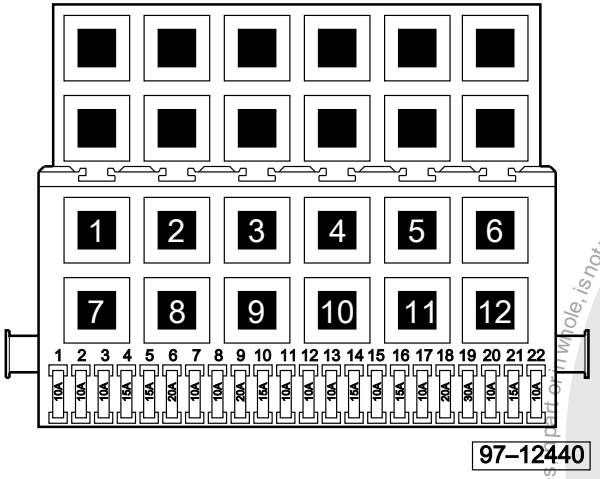
1.9 ltr. - Cat. Diesel engine/47 kW, engine code AEF

From November 1994

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



12 - Glow plugs relay (104)
15 - Automatic glow period control unit (136)
16 - Automatic glow period control unit (136)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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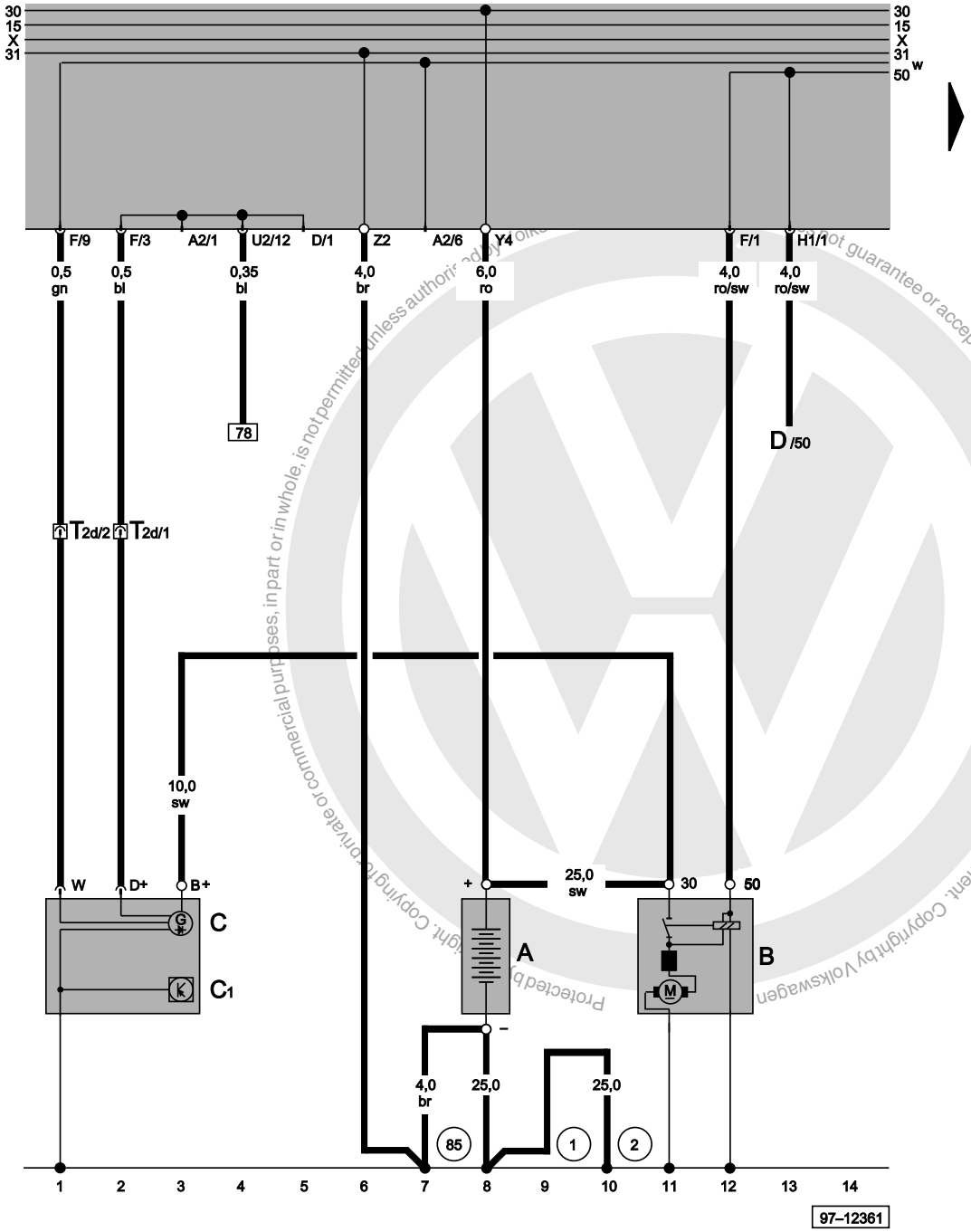

Battery, alternator, starter

A	Battery
B	Starter
C	Alternator
C1	Voltage regulator
D	Ignition/starter switch
T2d	2-pin connector, on gearbox
1	Earth strap, battery body
2	Earth strap, gearbox - body
85	Earth connection -1-, in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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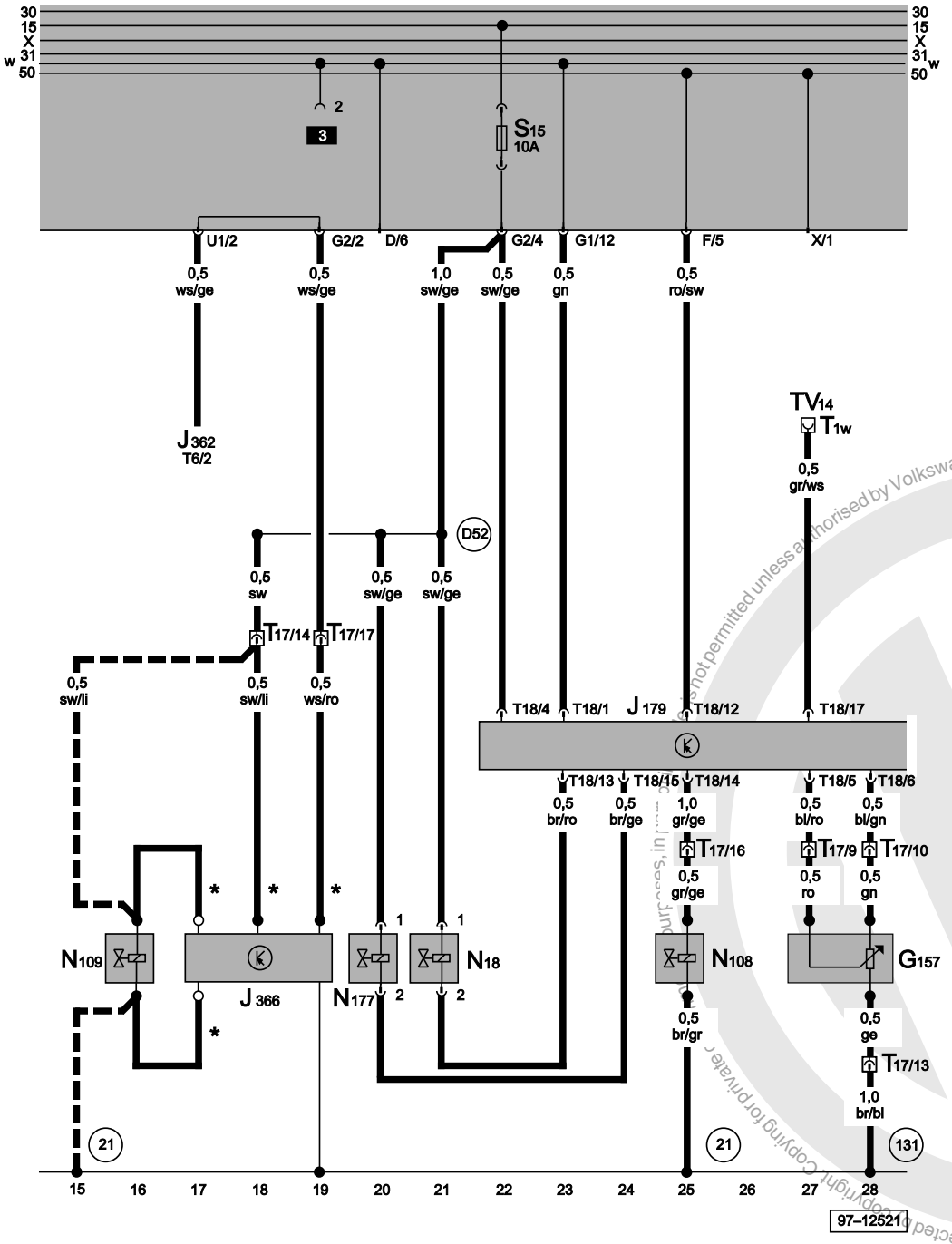

Automatic glow period control unit, idling speed boost valve, EGR two-way valve, commencement of injection valve, load signal potentiometer, fuel cut-off valve

G157	Load signal potentiometer
J179	Automatic glow period control unit, above the relay plate
J362	Immobilizer control unit, next to steering column
J366	Fuel shut-off valve control unit, on diesel injection pump
N18	Exhaust gas recirculation valve
N108	Commencement of injection valve
N109	Fuel shut-off valve
N177	Idling speed boost valve
T1w	Single connector
T6	6-pin connector, on immobilizer control unit
T17	17-pin connector, on engine
T18	18-pin connector, on automatic glow period control unit
TV14	Self-diagnosis junction box, above the relay plate
21	Earth point, near diesel injection pump
131	Earth connection -2-, in engine compartment wiring harness
D52	Positive connection (15a), in engine compartment wiring harness
*	For vehicles without immobilizer only from January 1995
---	For vehicles without immobilizer only from November 1994

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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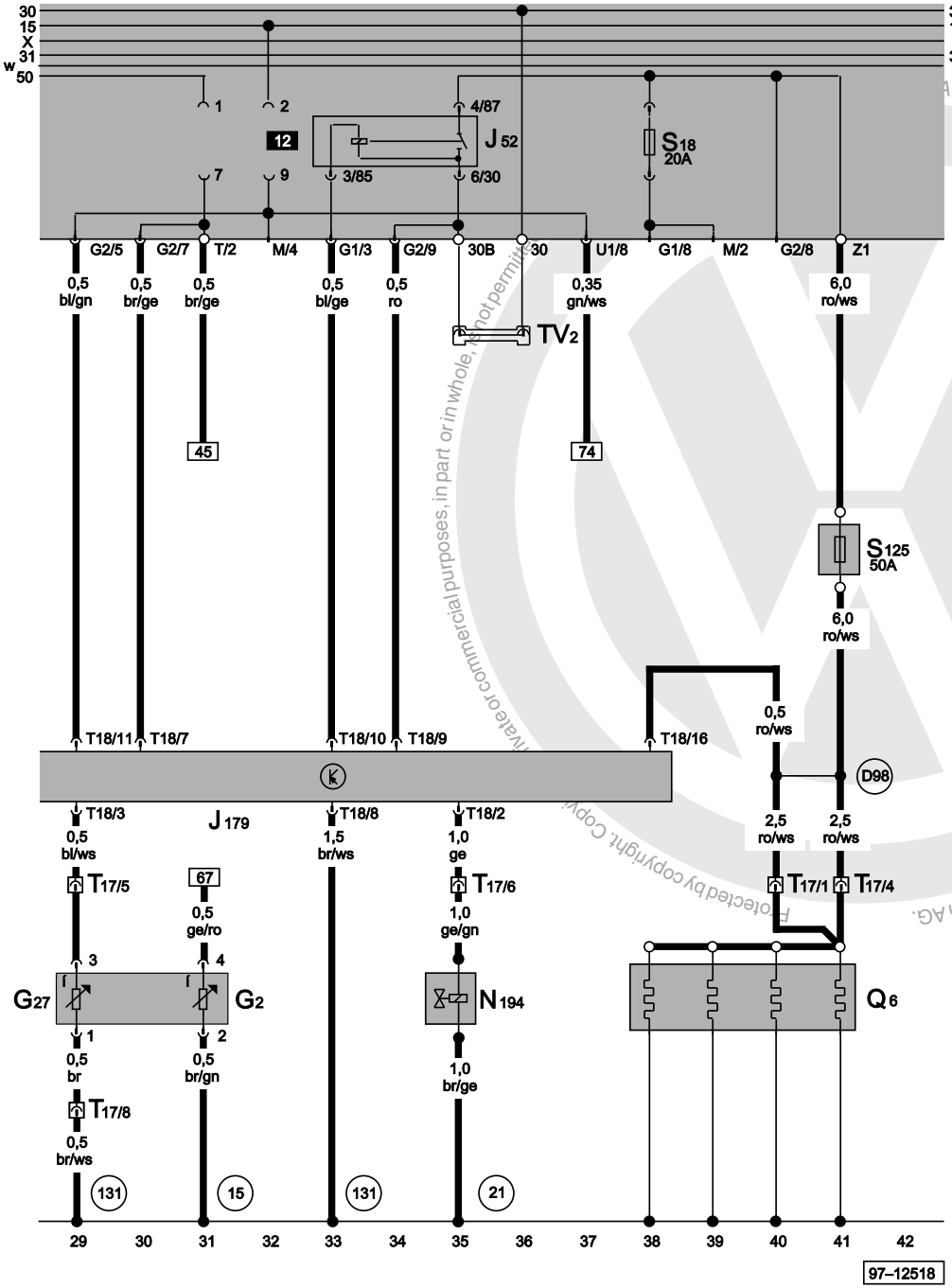

Automatic glow period control unit, engine temperature sender, coolant temperature sender, full load stop valve, glow plugs

G2	Coolant temperature sender
G27	Engine temperature sender
J52	Glow plug relay
J179	Automatic glow period control unit, above the relay plate
N194	Full throttle limit valve
Q6	Glow plugs
S125	Glow plugs fuse, above the relay plate
T17	17-pin connector, on engine
T18	18-pin connector, on automatic glow period control unit
TV2	Terminal 30 junction box
15	Earth point, on cylinder head
21	Earth point, near diesel injection pump
131	Earth connection -2-, in engine compartment wiring harness
D98	Connection (golw plugs), in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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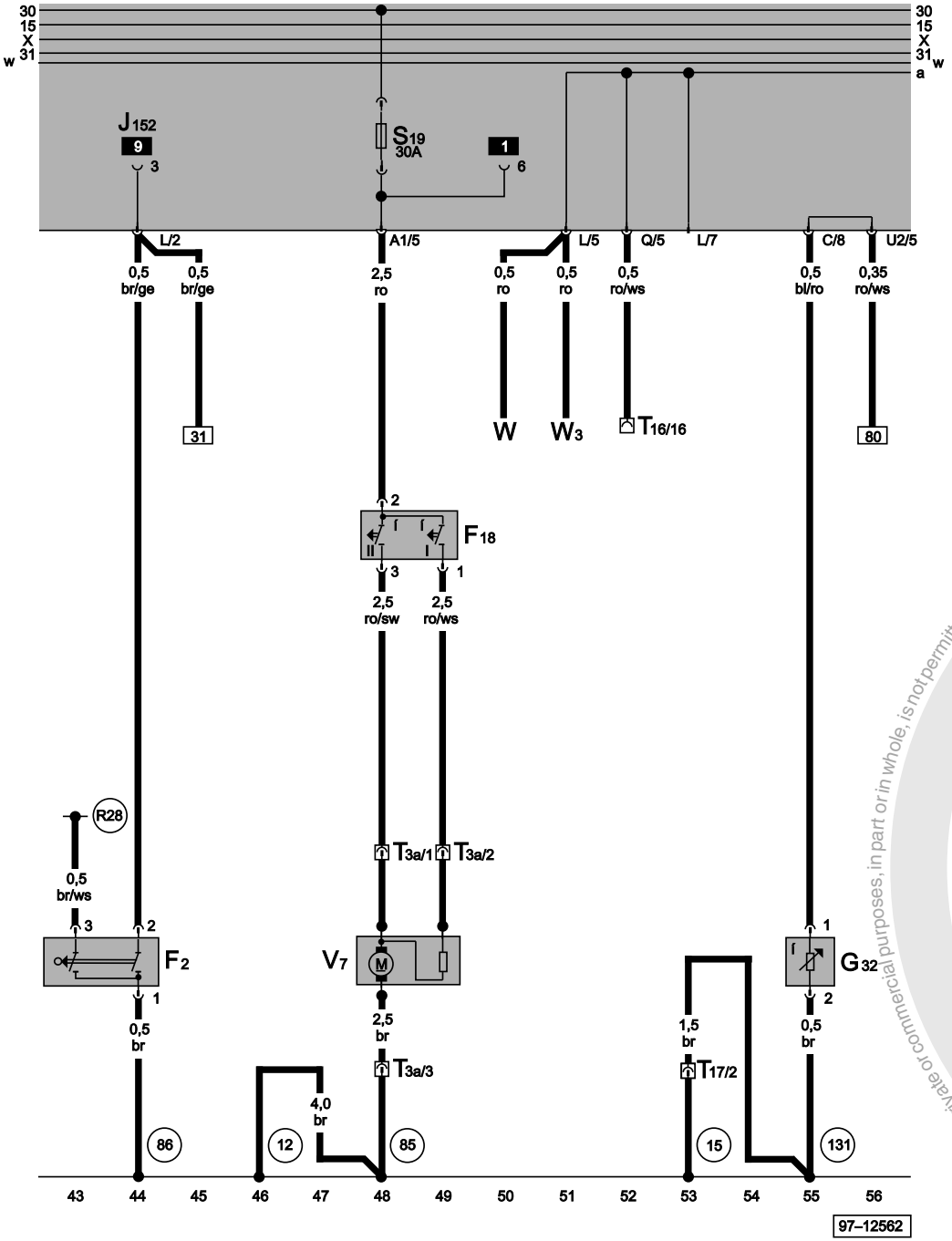

Radiator fan, coolant shortage indicator sender

F2	Door contact switch - driver side
F18	Radiator fan thermo-switch
G32	Coolant shortage indicator sender
J152	Lights switched on warning buzzer
T3a	3-pin connector, on radiator fan
T16	16-pin connector, behind shelf driver's side, - Self-diagnosis connection for V.A.G 1551 -
T17	17-pin connector, on engine
V7	Radiator fan
W	Interior light, front
W3	Luggage compartment light
12	Earth point, left in engine compartment, under battery
15	Earth point, on cylinder head
85	Earth connection -1-, in engine compartment wiring harness
86	Earth connection -1-, in rear wiring harness
131	Earth connection -2-, in engine compartment wiring harness
R28	Connection -2- (door contact switch), in rear wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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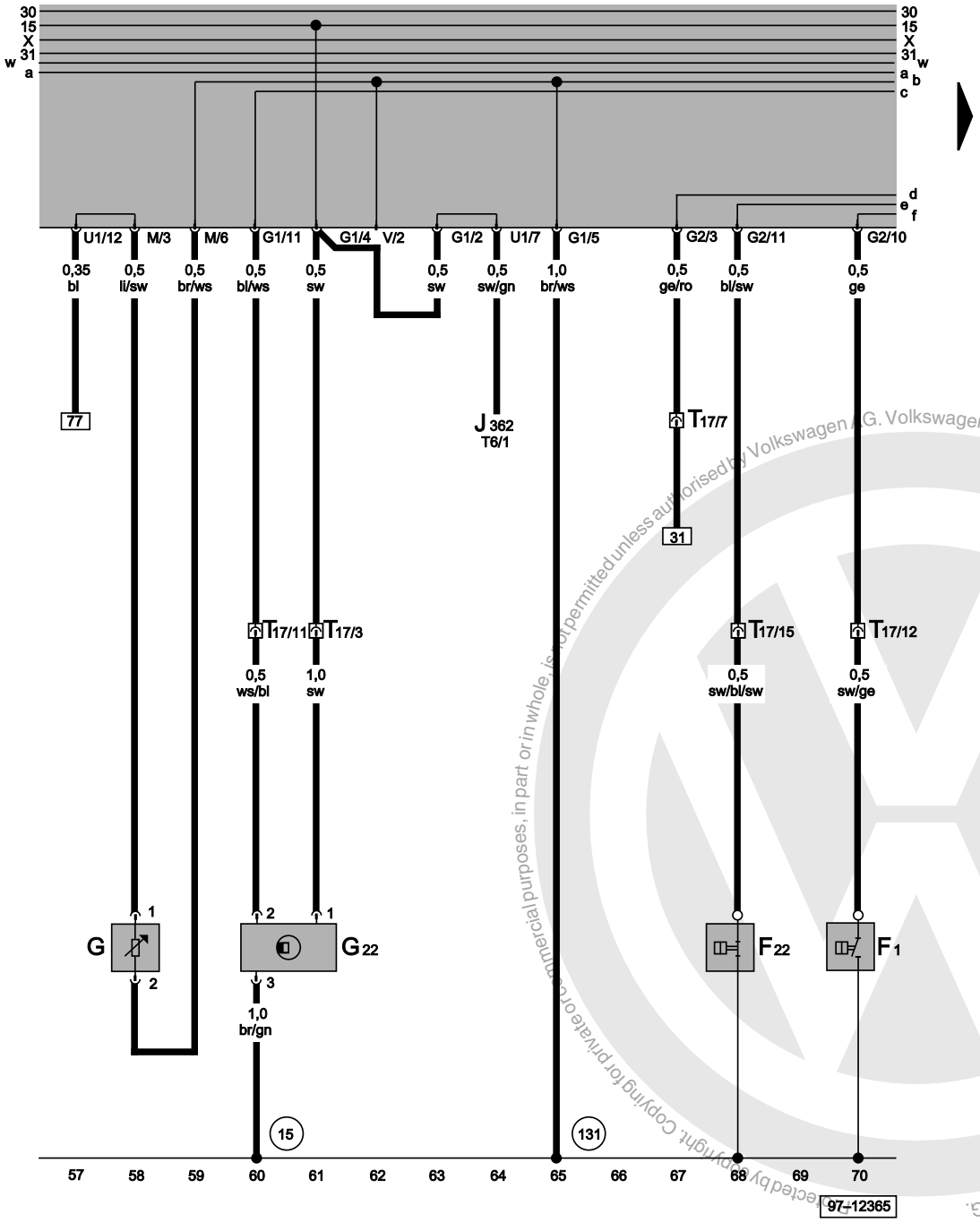

Fuel level sender, oil pressure switch, speedometer sender

F1	Oil pressure switch
F22	Oil pressure switch (0.3 bar)
G	Fuel gauge sender
G22	Speedometer sender (Hall sender on gearbox)
J362	Immobilizer control unit, next to steering column
T6	6-pin connector, on immobilizer control unit
T17	17-pin connector, on engine
15	Earth point, on cylinder head
131	Earth connection -2-, in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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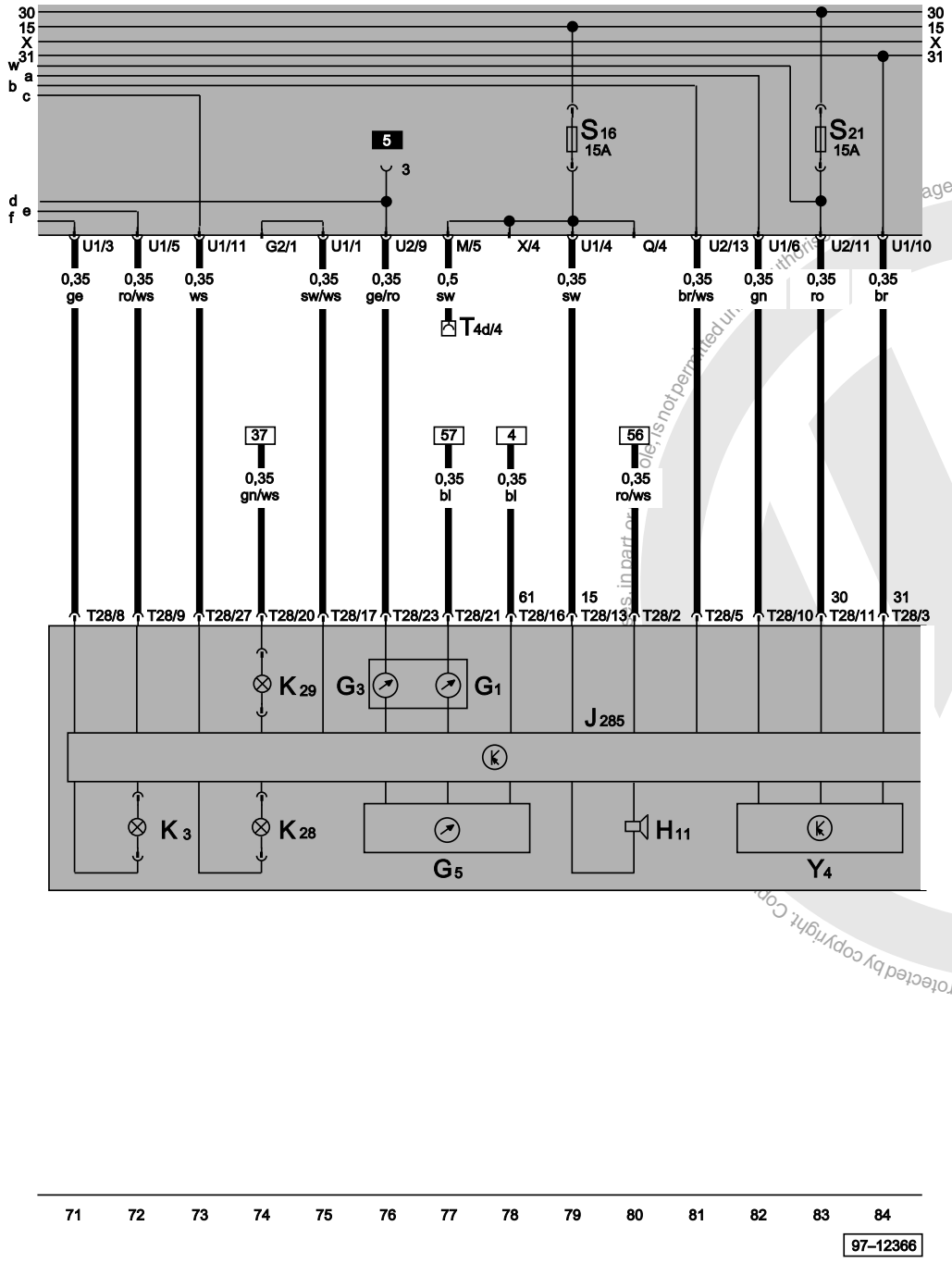

Dash panel insert, fuel gauge, coolant shortage and coolant temperature warning/gauge, optical and acoustic oil pressure warning, odometer display, glow period warning lamp

G1	Fuel gauge
G3	Coolant temperature gauge
G5	Rev. counter
H11	Oil pressure warning buzzer
J285	Control unit with display in dash panel insert
K3	Oil pressure warning lamp
K28	Coolant temperature/coolant shortage warning lamp
K29	Glow period warning lamp
T4d	4-pin connector, behind relay plate
T28	28-pin connector, on dash panel insert
Y4	Odometer display

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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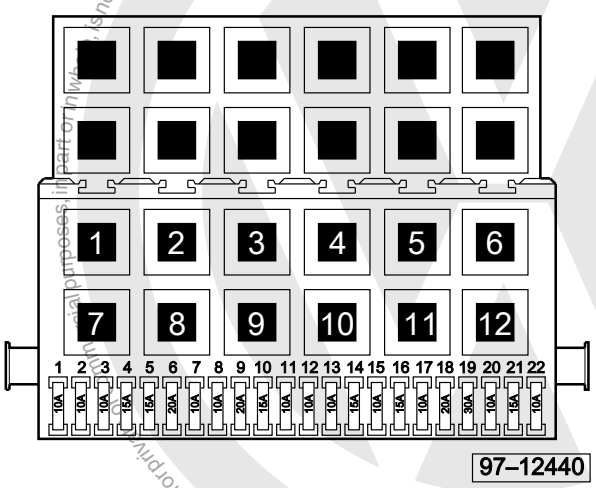
Fabric sunroof

From February 1995

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



2 - Rear window wipe/wash relay (72)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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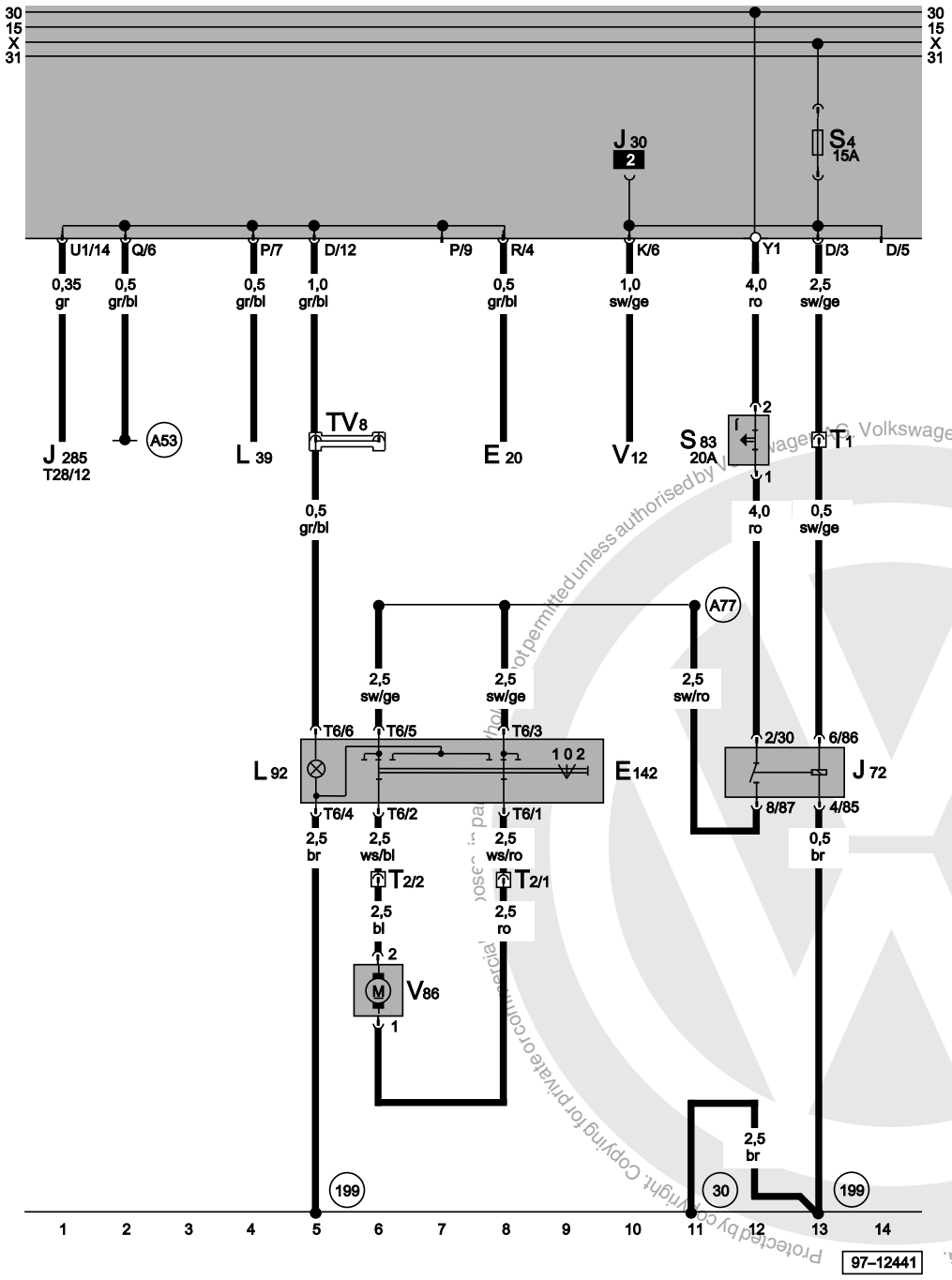

Fabric sunroof switch, folding sliding roof motor

E20	Switches and instruments - lighting control
E142	Fabric sunroof switch
J30	Rear window wiper/washer relay
J72	Fabric sunroof relay
J285	Control unit with display in dash panel insert
L39	Heated rear window switch bulb
L92	Folding fabric sunroof switch illumination
S83	Sliding sunroof thermo fuse
T1	Single connector, behind relay plate
T2	2-pin connector
T6	6-pin connector, on fabric sunroof switch
T28	28-pin connector, on dash panel insert
TV8	Terminal 58b junction box
V12	Rear window wiper motor
V86	Fabric sunroof motor
30	Earth point -1-, next to relay plate
199	Earth connection -3-, in dash panel wiring harness
A53	Positive connection (58b), in dash panel wiring harness
A77	Connection (fabric sunroof), in dash panel wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li = purple
ge = yellow
or = orange
rs = pink

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1.4 ltr./44 kW Motronic, engine code AEX, 1.6 ltr. - 1AV /55 kW, engine code AEE

From August 1995

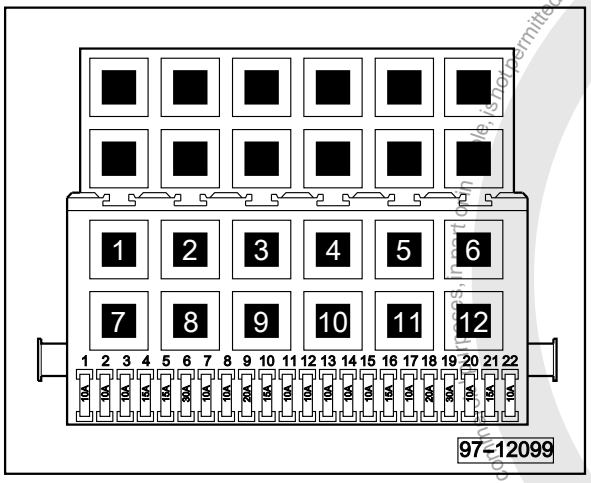
1.0 ltr./37 kW Motronic, engine code AER

From July 1996

1.6 ltr. - 1AV /55 kW, engine code AEE, from August 1995

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



12 - Fuel pump relay (167)

Note!

- *The number in brackets behind the part designation denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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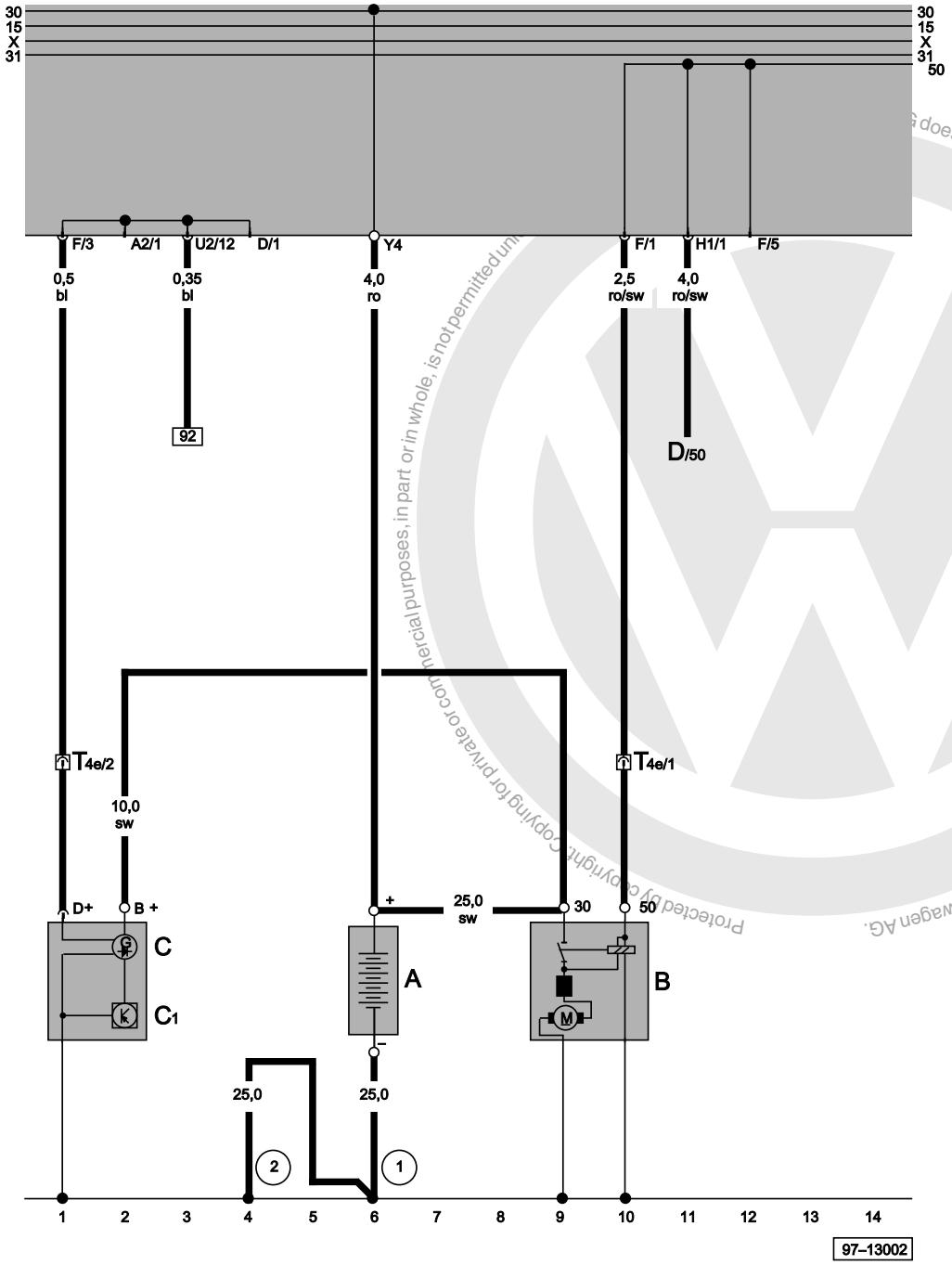

Battery, starter, alternator

A	Battery
B	Starter
C	Alternator
C1	Voltage regulator
D	Ignition/starter switch
T4e	4-pin connector, on gearbox
1	Earth strap, battery body
2	Earth strap, gearbox - body

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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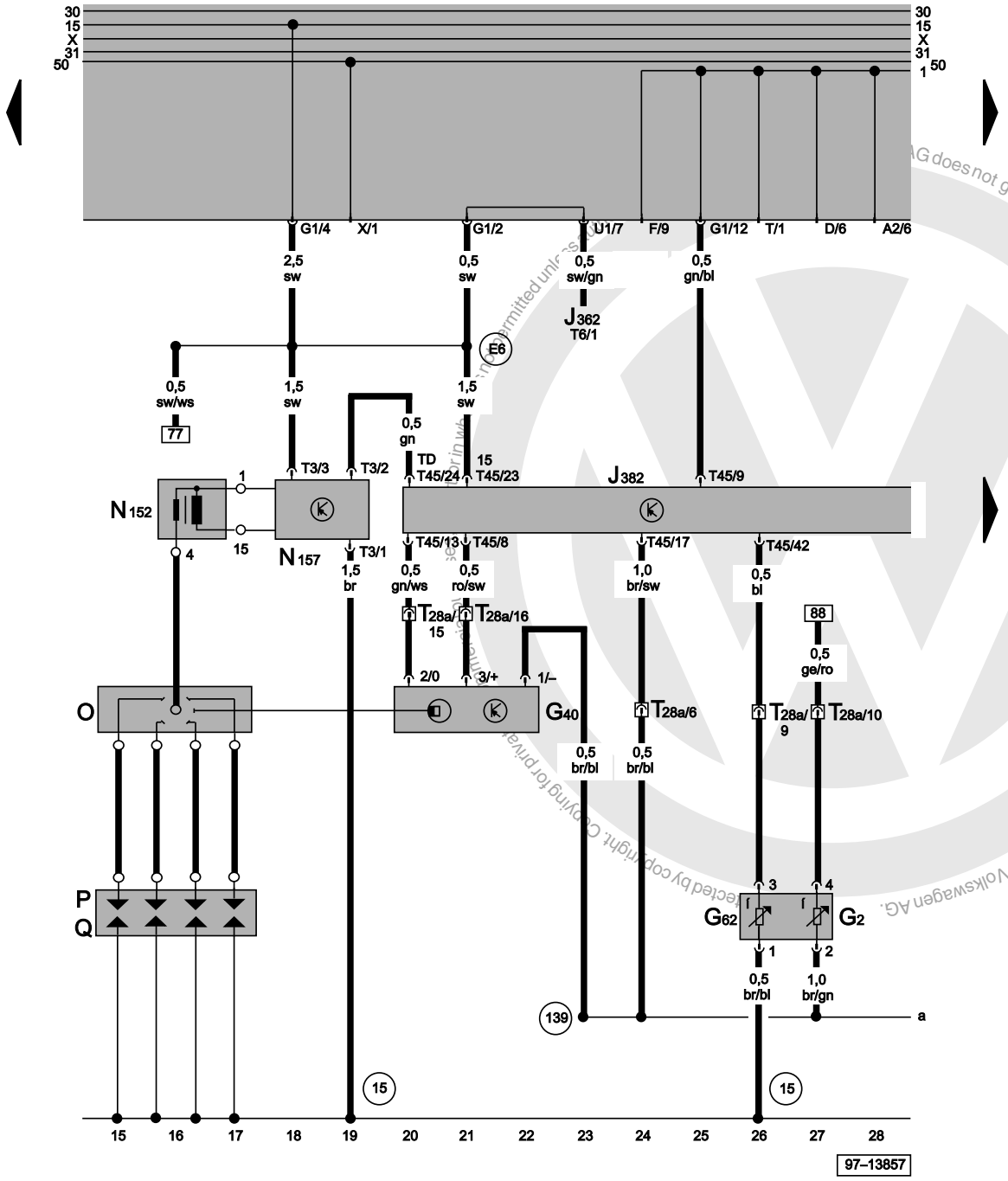

1AV control unit (injection system), ignition system, Hall sender, coolant temperature sender

G2	Coolant temperature sender
G40	Hall sender
G62	Coolant temperature sender
J362	Immobilizer control unit, next to steering column
J382	1AV control unit (injection system), right in plenum chamber
N152	Ignition transformer
N157	Ignition transformer output stage
O	Ignition distributor
P	Spark plug connector
Q	Flame plug
T3	3-pin connector, on ignition transformer output stage
T6	6-pin connector, on immobilizer control unit
T28a	28-pin connector, on engine
T45	45-pin connector, on 1AV control unit, (injection system)
15	Earth point, on cylinder head
139	Earth connection (sender earth), in Motronic wiring harness
E6	Positive connection -1- (15), in Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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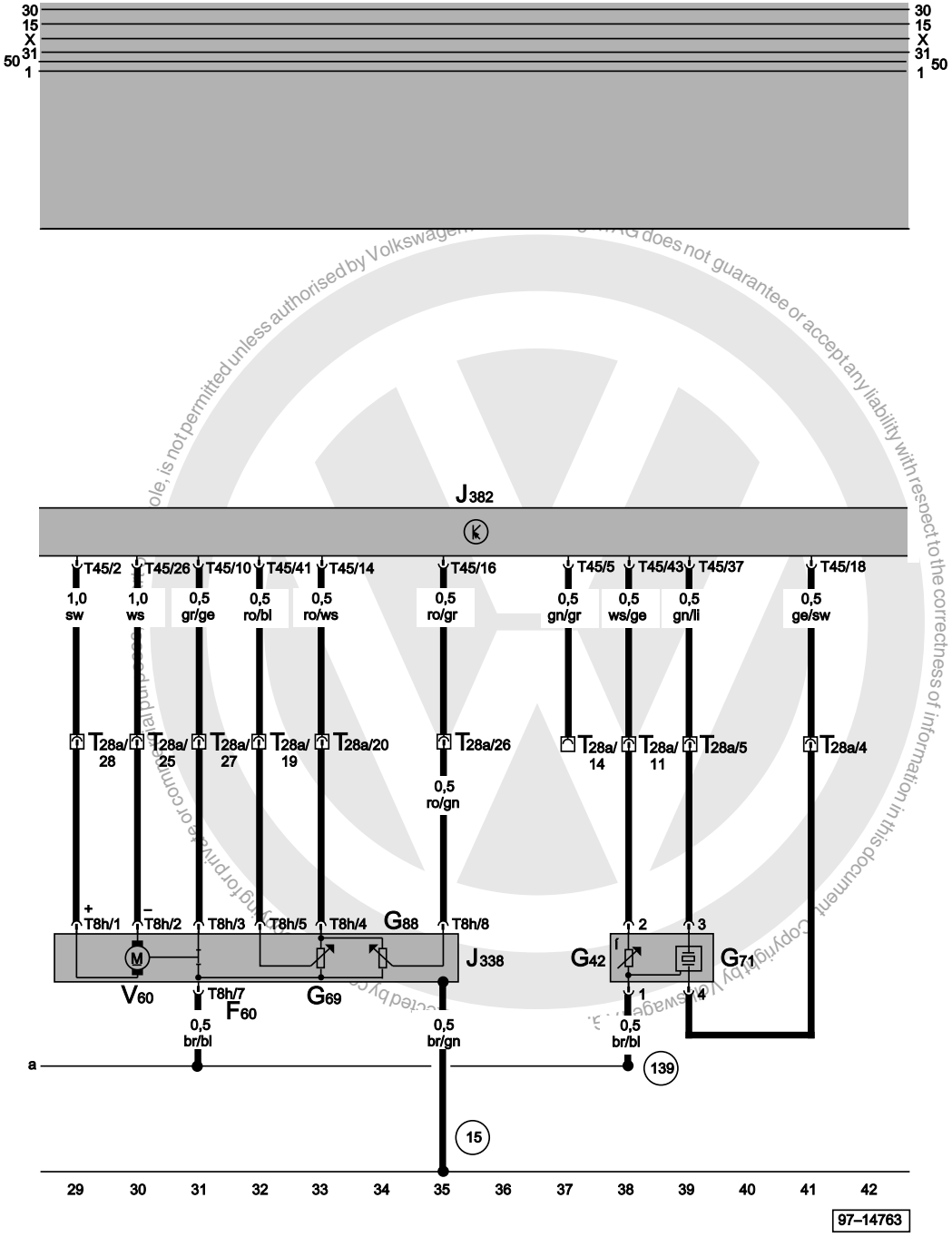

1AV control unit (injection system), throttle valve control part, intake air temperature sender, intake manifold pressure sender

F60	Idling switch
G42	Intake air temperature sender
G69	Throttle valve potentiometer
G71	Intake manifold pressure sender
G88	Throttle valve positioner potentiometer
J338	Throttle valve control unit
J382	1AV control unit (injection system), right in plenum chamber
T8h	8-pin connector, on throttle valve control unit
T28a	28-pin connector, on engine
T45	45-pin connector, on 1AV control unit, (injection system)
V60	Throttle valve positioner
15	Earth point, on cylinder head
139	Earth connection (sender earth), in Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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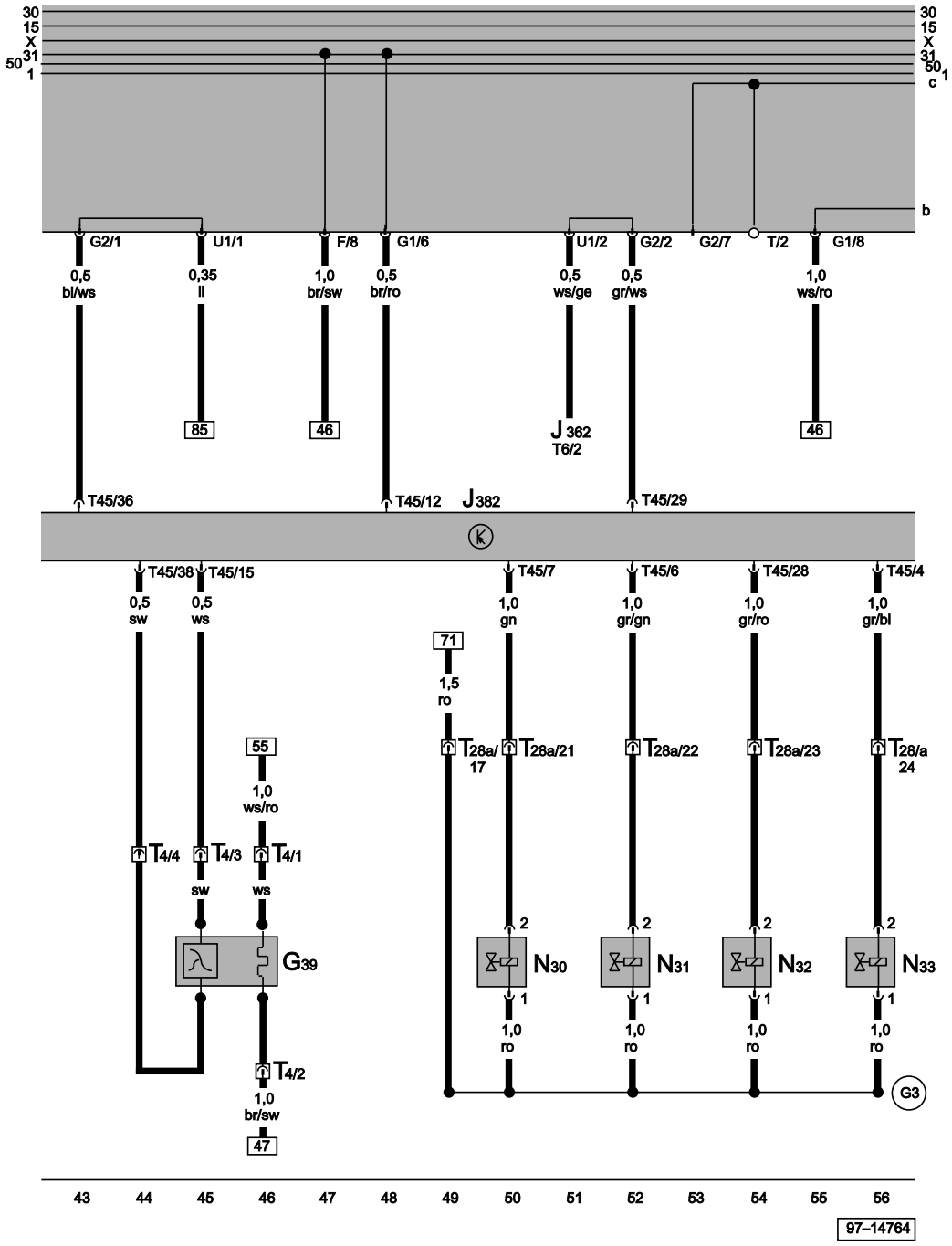

1AV control unit, (injection system), injectors, Lampda probe

G39	Lambda probe
J362	Immobilizer control unit, next to steering column
J382	1AV control unit (injection system), right in plenum chamber
N30	Injector, cylinder 1
N31	Injector, cylinder 2
N32	Injector, cylinder 3
N33	Injector, cylinder 4
T4	4-pin connector, on gearbox
T6	6-pin connector, on immobilizer control unit
T28a	28-pin connector, on engine
T45	45-pin connector, on 1AV control unit, (injection system)
(G3)	Positive (+) connection in cable sleeve - injectors

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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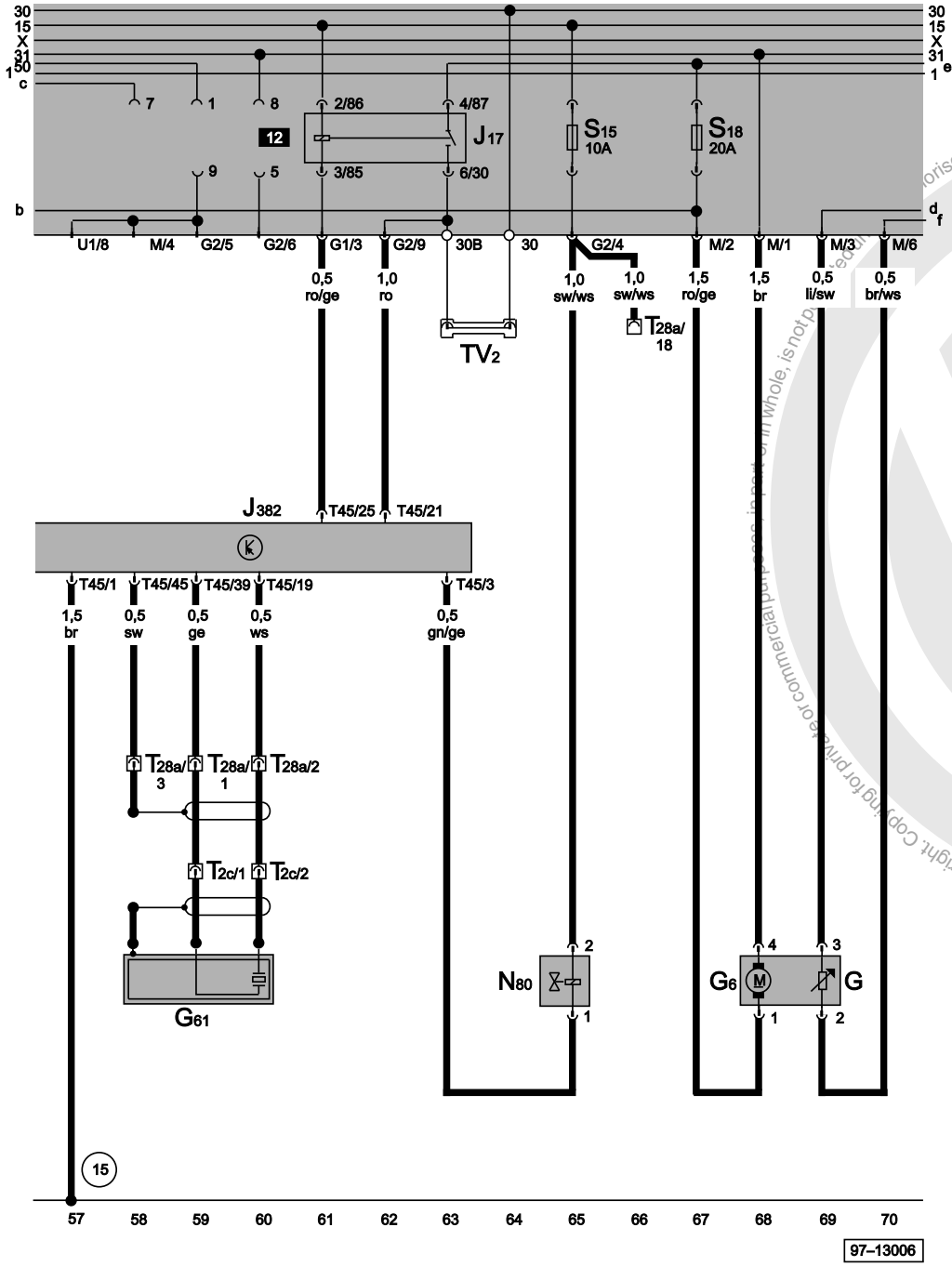

1AV control unit (injection system), knock sensor, activated charcoal filter system, fuel supply system

G	Fuel gauge sender
G6	Fuel pump (pre-supply pump)
G61	Knock sensor I
J17	Fuel pump relay (01259)
J382	1AV control unit (injection system), right in plenum chamber
N80	Activated charcoal filter system solenoid valve I
T2c	2-pin connector, on engine
T28a	28-pin connector, on engine
T45	45-pin connector, on 1AV control unit, (injection system)
TV2	Terminal 30 junction box, behind the relay plate
15	Earth point, on cylinder head

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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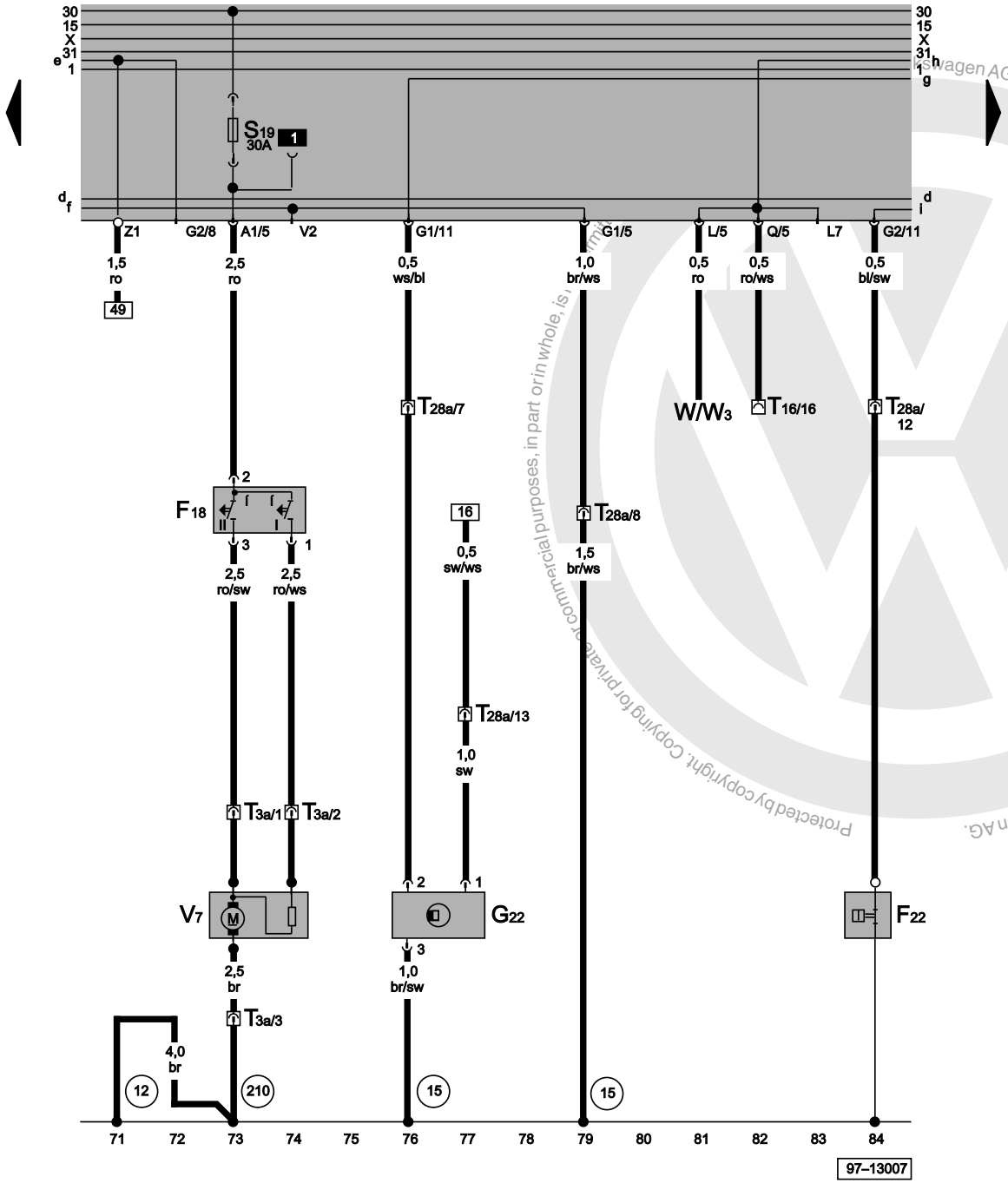

Radiator fan, speedometer sender, oil pressure switch

F18	Radiator fan thermo-switch
F22	Oil pressure switch (0.3 bar)
G22	Speedometer sender (Hall sender on gearbox)
T3a	3-pin connector, on radiator fan
T16	16-pin connector, behind shelf driver's side, self-diagnosis connector for V.A.G 1551
T28a	28-pin connector, on engine
V7	Radiator fan
W	Interior light, front
W3	Luggage compartment light
12	Earth point, left in engine compartment, under battery
15	Earth point, on cylinder head
210	Earth connection -1-, in Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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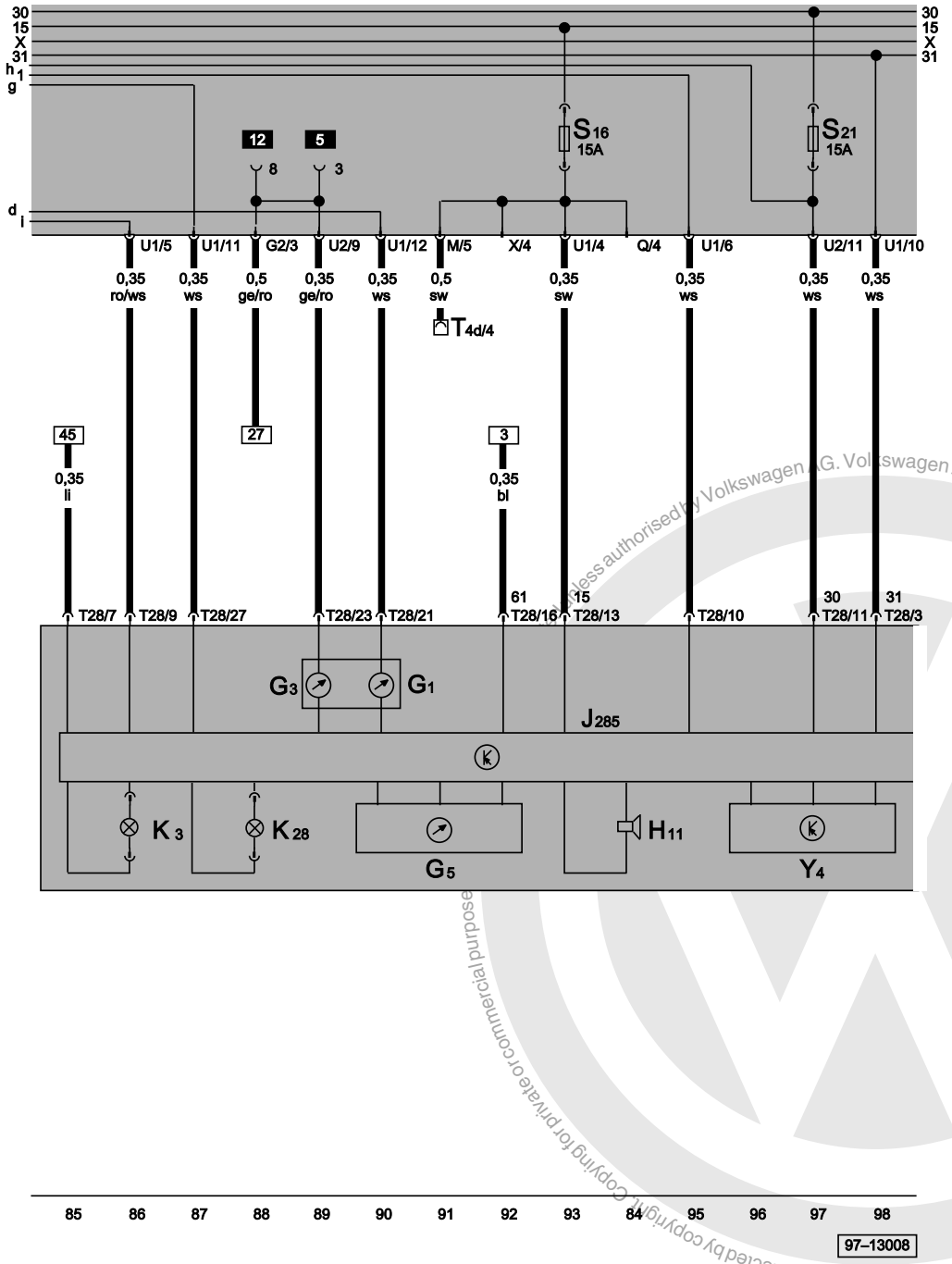

Dash panel insert, fuel gauge, coolant shortage and coolant temperature warning/gauge, optical and acoustic oil pressure warning, trip recorder

G1	Fuel gauge
G3	Coolant temperature gauge
G5	Rev. counter
H11	Oil pressure warning buzzer
J285	Control unit with display in dash panel insert
K3	Oil pressure warning lamp
K28	Coolant temperature/coolant shortage warning lamp
T4d	4-pin connector, behind relay plate
T28	28-pin connector, in dash panel insert
Y4	Odometer display

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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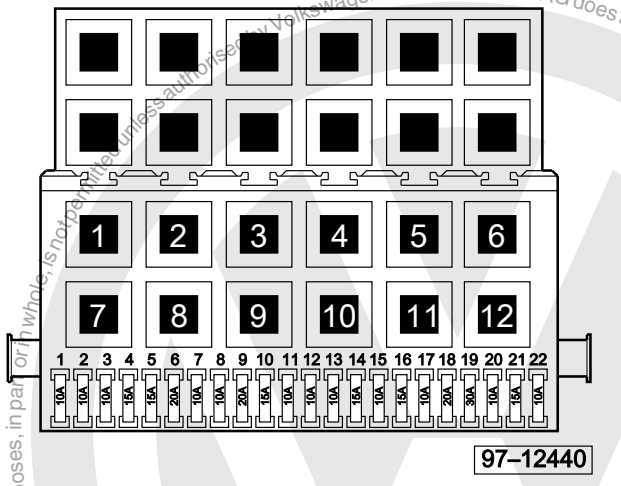
Automatic gearbox

⇒ 1.4 ltr./44 kW Motronic, engine code AEX
⇒ 1.6 ltr. - 1AV /55 kW, engine code AEE
From September 1995

Relay locations:

For relay locations and multi-pin connector wiring - see section "Fitting locations section"



12 - Fuel pump relay (167)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red

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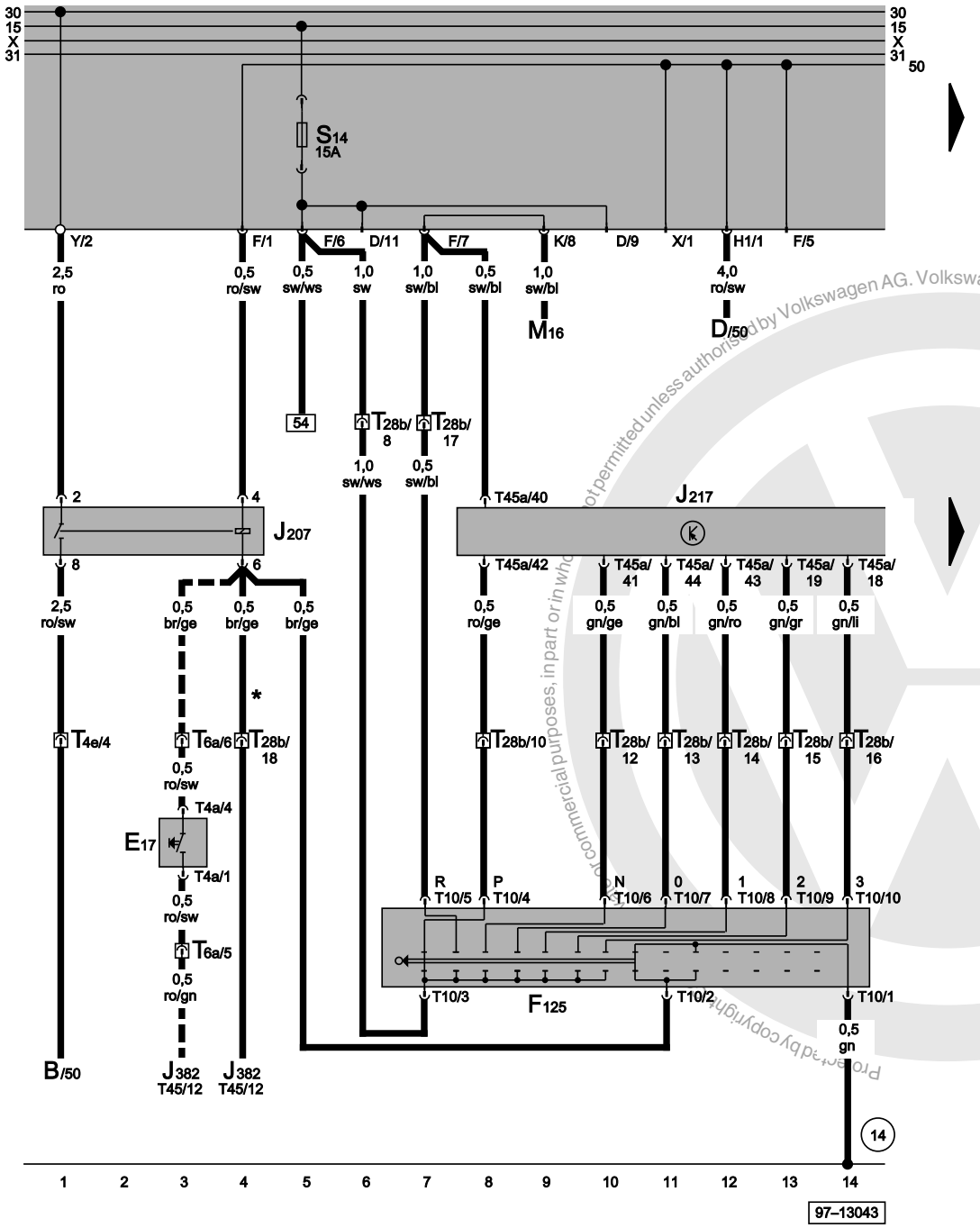

Automatic gearbox control unit, starter inhibitor relay, multi-function switch

B	Starter
D	Ignition/starter switch
E17	Starter inhibitor switch
F125	Multi-function switch
J207	Starter inhibitor relay, above relay plate
J217	Automatic gearbox control unit, centre in plenum chamber
J382	1AV control unit (injection system), right in plenum chamber
M16	Reversing light bulb, left
T4a	4-pin connector, on starter inhibitor switch
T4e	4-pin connector, on gearbox
T6a	6-pin connector, near gear change lever
T10	10-pin connector, on multi-function switch
T28b	28-pin connector, on gearbox
T45	45-pin connector, on 1AV control unit, (injection system)
T45a	45-pin connector, on automatic gearbox control unit
(14)	Earth point, on gearbox
*	LHD only
---	RHD only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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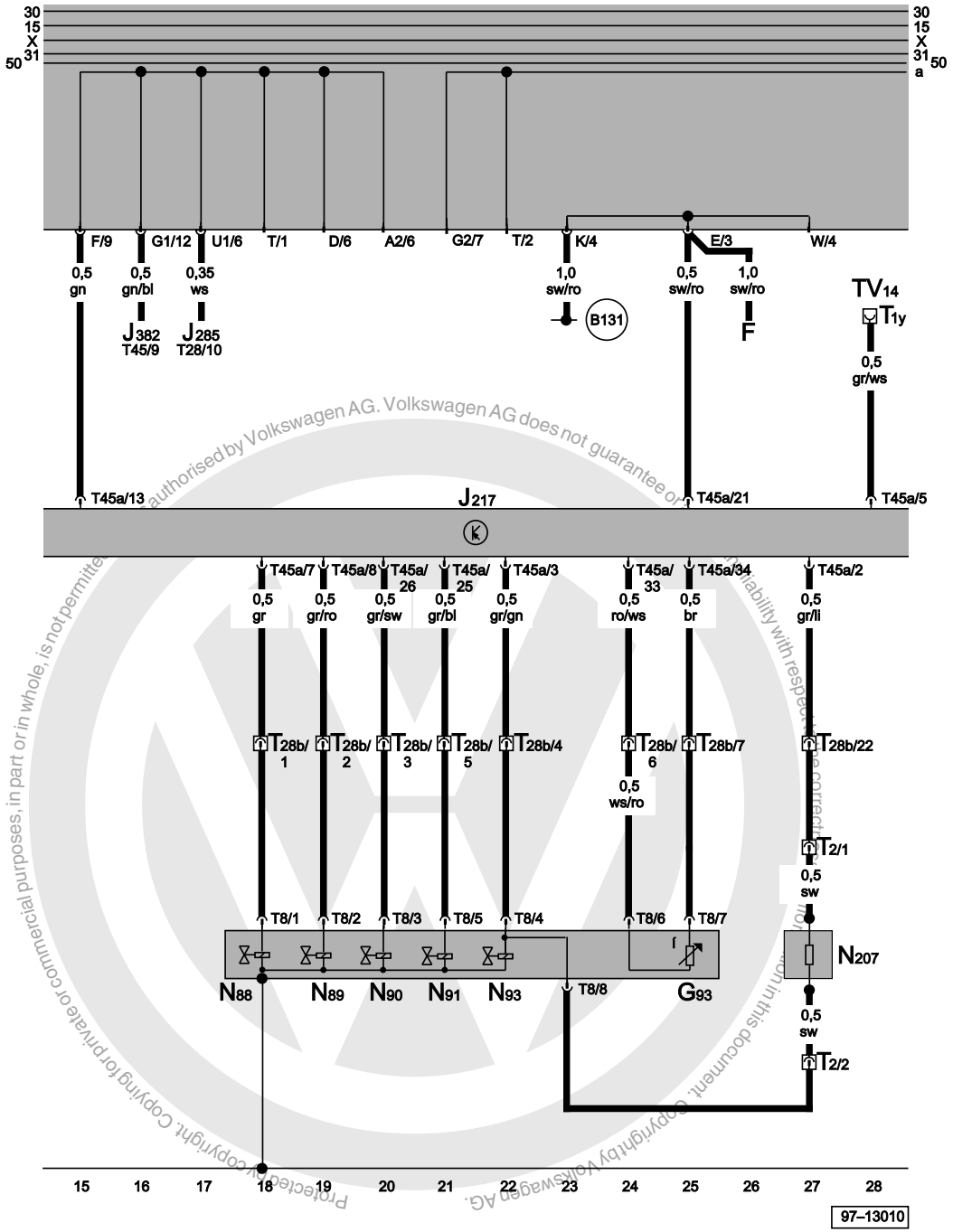

Automatic gearbox control unit, solenoid valves, solenoid valve preresistance

F	Brake light switch
G93	Gearbox oil temperature sender
J217	Automatic gearbox control unit, centre in plenum chamber
J285	Control unit with display in dash panel insert
J382	1AV control unit (injection system), right in plenum chamber
N88	Solenoid valve 1
N89	Solenoid valve 2
N90	Solenoid valve 3
N91	Solenoid valve 4
N93	Solenoid valve 6
N207	Solenoid valve series resistance, automatic gearbox
T1y	Single connector
T2	2-pin connector, on gearbox
T8	8-pin connector, on gearbox
T28	28-pin connector, on dash panel insert
T28b	28-pin connector, on gearbox
T45	45-pin connector, on 1AV control unit, (injection system)
T45a	45-pin connector, on automatic gearbox control unit
TV14	Self-diagnosis junction box, above the relay plate
B131	Connection (54), in interior wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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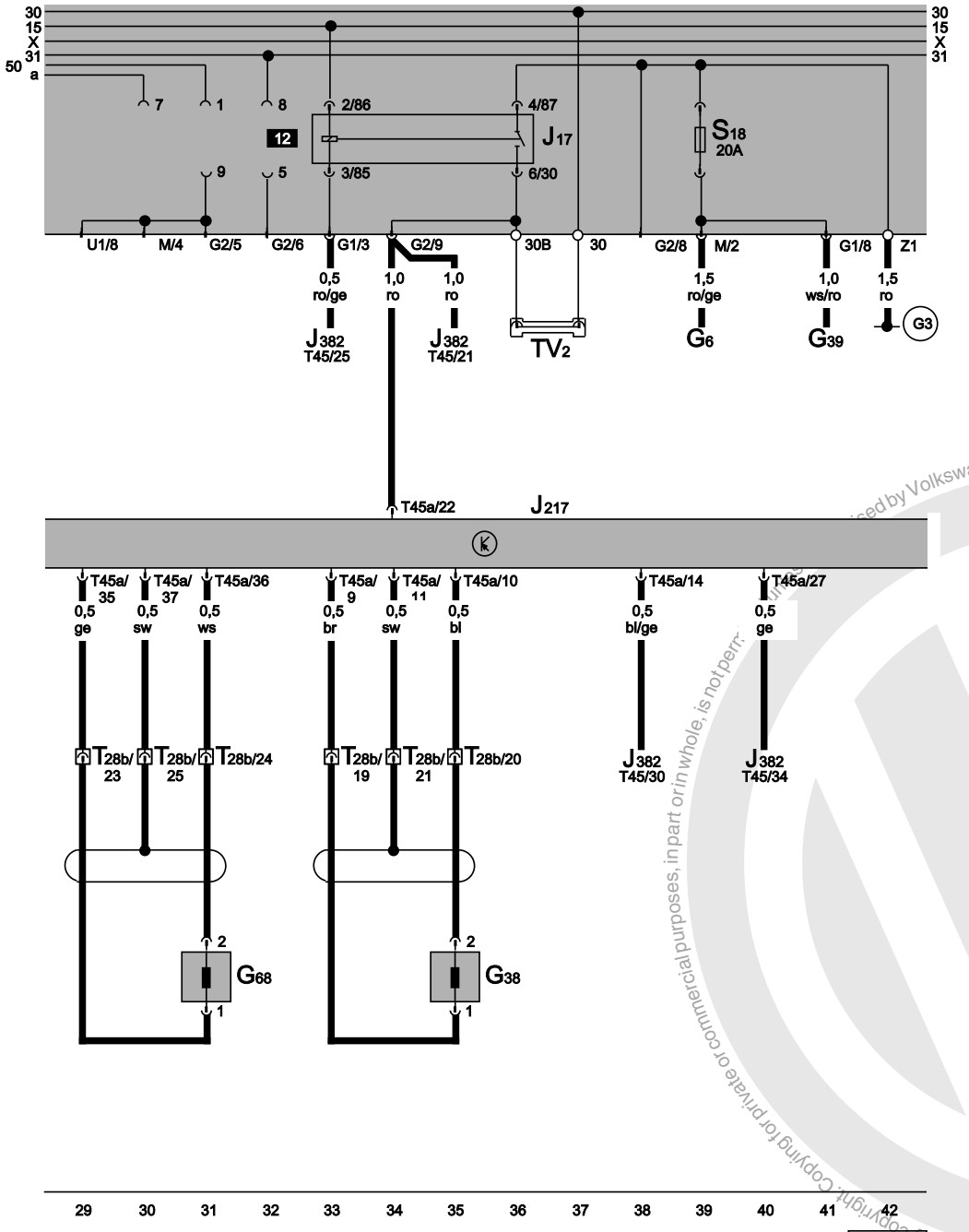

Automatic gearbox control unit, gearbox speed sender, road speed sender

G6	Fuel pump (pre-supply pump)
G38	Gearbox speed sender
G39	Lambda probe
G68	Road speed sender (inductive sender, 2 connections)
J17	Fuel pump relay
J217	Automatic gearbox control unit, centre in plenum chamber
J382	1AV control unit (injection system), right in plenum chamber
T28b	28-pin connector, on gearbox
T45	45-pin connector, on 1AV control unit, (injection system)
T45a	45-pin connector, on automatic gearbox control unit
TV2	Terminal 30 junction box, behind the relay plate
G3	Positive (+) connection in cable sleeve - injectors

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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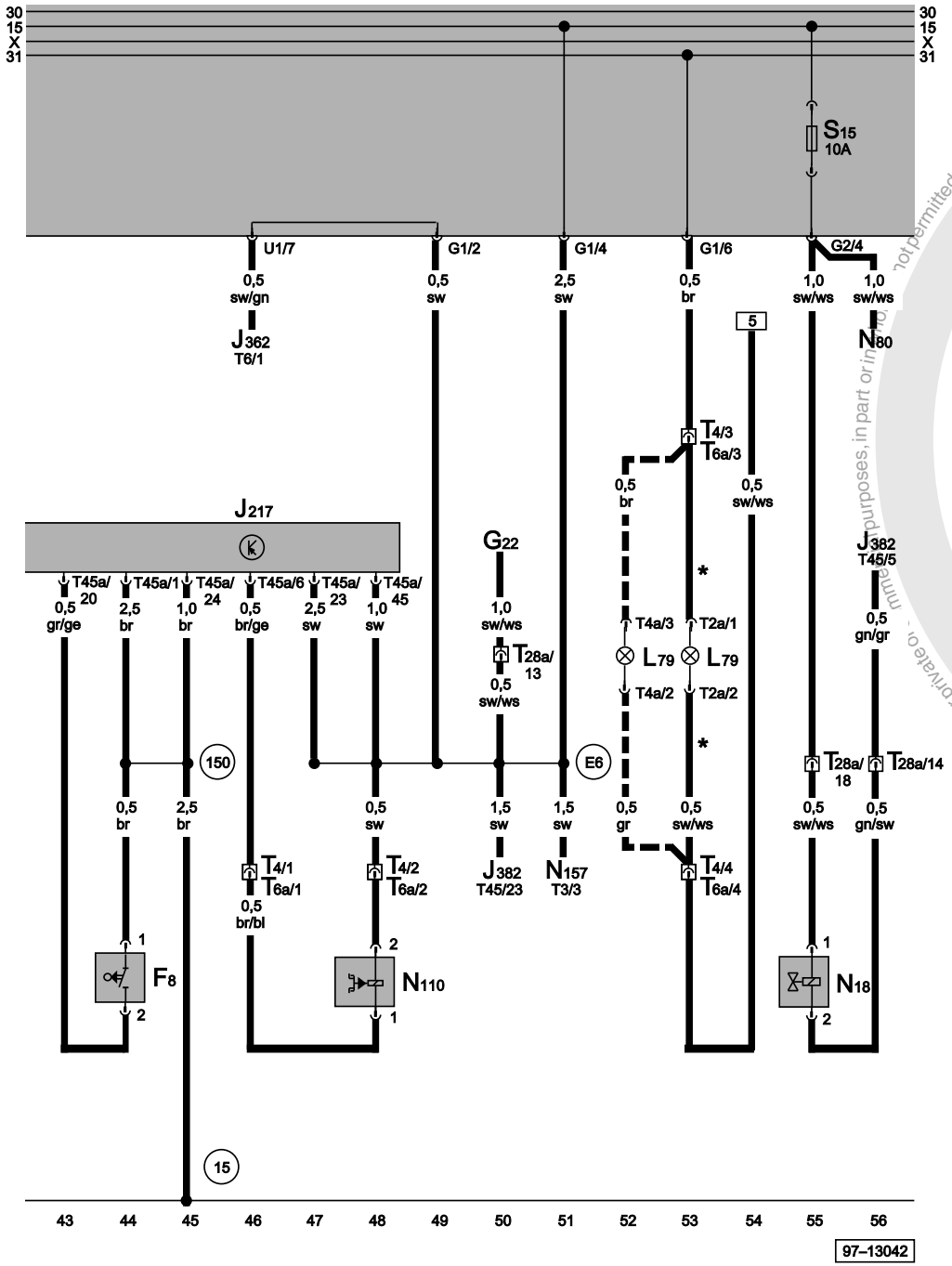

Automatic gearbox control unit, Kick-down-switch, selector lever lock solenoid, EGR valve

F8	Kick-down switch
G22	Speedometer sender (Hall sender on gearbox)
J217	Automatic gearbox control unit, centre in plenium chamber
J362	Immobilizer control unit, on steering column
J382	1AV control unit (injection system), right in plenum chamber
L79	Selector lever illumination
N18	Exhaust gas recirculation valve
N80	Activated charcoal filter system solenoid valve I
N110	Selector lever lock solenoid
N157	Ignition transformer output stage
T2a	2-pin connector, on selector lever light
T3	3-pin connector
T4	4-pin connector, near gear change lever
T4a	4-pin connector, on starter inhibitor switch
T6	6-pin connector
T6a	6-pin connector, near gear change lever
T28a	28-pin connector, on engine
T45	45-pin connector, on 1AV control unit, (injection system)
T45a	45-pin connector, on automatic gearbox control unit
15	Earth point, on cylinder head
150	Earth connection, in automatic gearbox wiring harness
E6	Positive (+) connection -1- (15), in Motronic wiring harness
*	LHD only
---	RHD only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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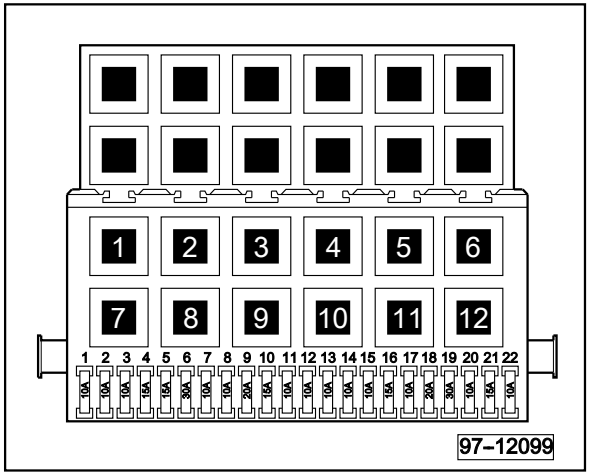
1.9 ltr. - Cat. Diesel engine/47 kW, engine code AEF

From November 1995

For alternatives to relay and fuse positions as well as multi-pin connector wiring - see "Fitting locations" section.



12 - Glow plugs relay (104)
15 - Automatic glow period control unit (136)
16 - Automatic glow period control unit (136)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red
7.5 A - brown
5 A - beige
3 A - lilac

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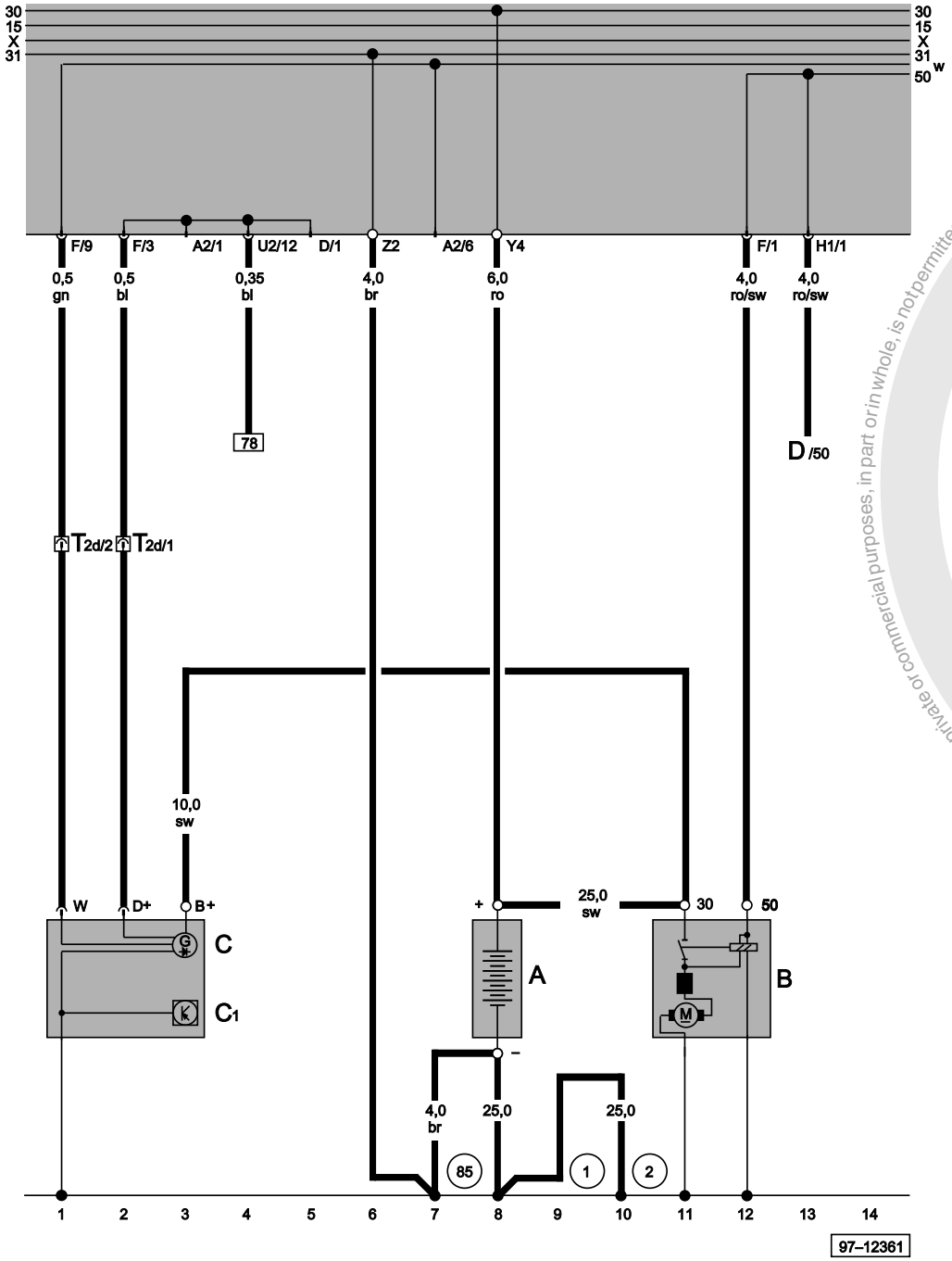

Battery, alternator, starter

A	Battery
B	Starter
C	Alternator
C1	Voltage regulator
D	Ignition/starter switch
T2d	2-pin connector, on gearbox
1	Earth strap, battery body
2	Earth strap, gearbox - body
85	Earth connection -1-, in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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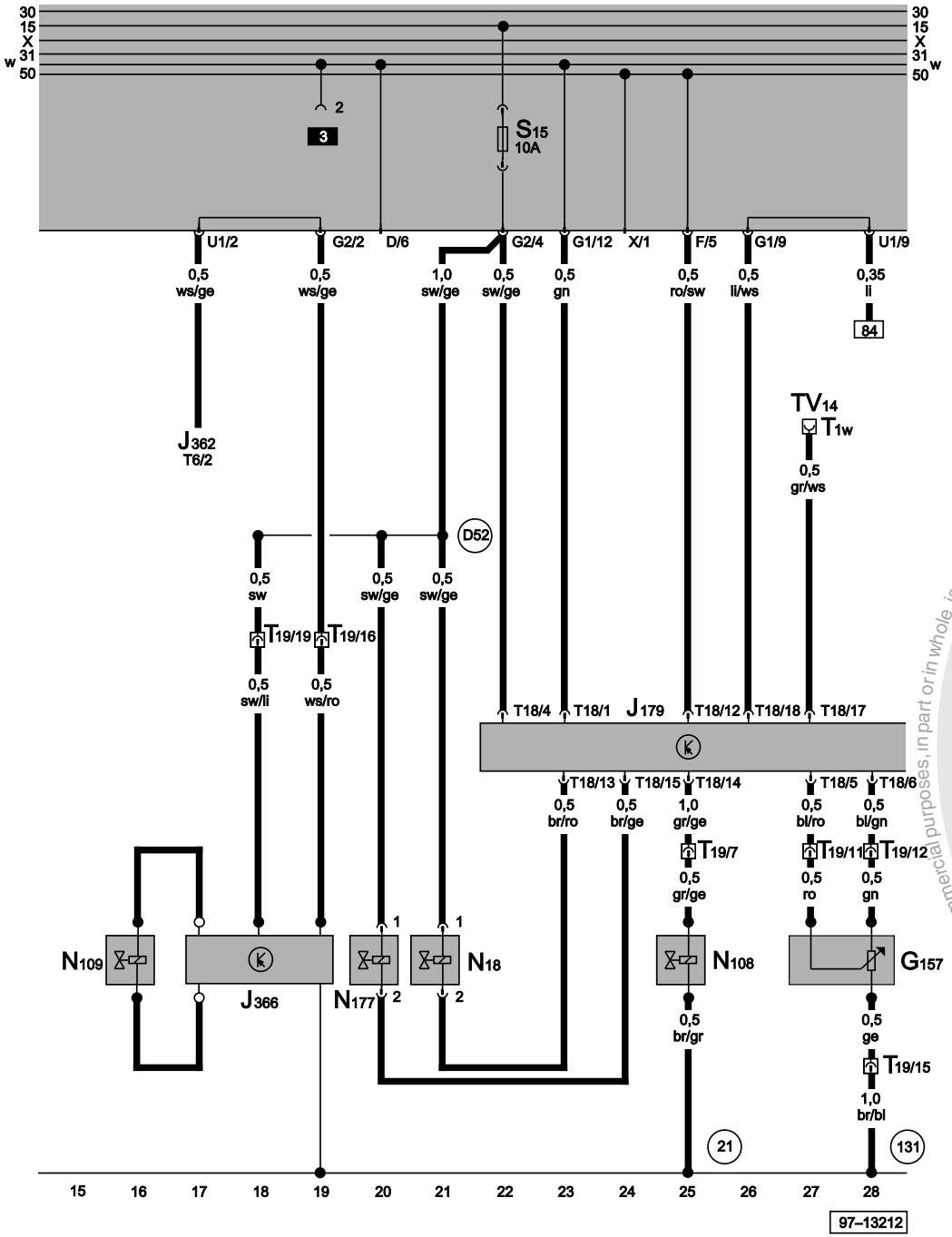

Automatic glow period control unit, idling speed boost valve, EGR two-way valve, commencement of injection valve, load signal potentiometer, fuel shut-off valve

G157	Load signal potentiometer
J179	Automatic glow period control unit, above the relay plate
J362	Immobilizer control unit, next to steering column
J366	Fuel shut-off valve control unit , on diesel injection pump
N18	Exhaust gas recirculation valve
N108	Commencement of injection valve
N109	Fuel shut-off valve
N177	Idling speed boost valve
T1w	Single connector
T6	6-pin connector, on immobilizer control unit
T18	18-pin connector, on automatic glow period control unit
T19	19-pin connector, on engine
TV14	Self-diagnosis junction box, above the relay plate
21	Earth point, near diesel injection pump
131	Earth connection -2-, in engine compartment wiring harness
D52	Positive connection (15a), in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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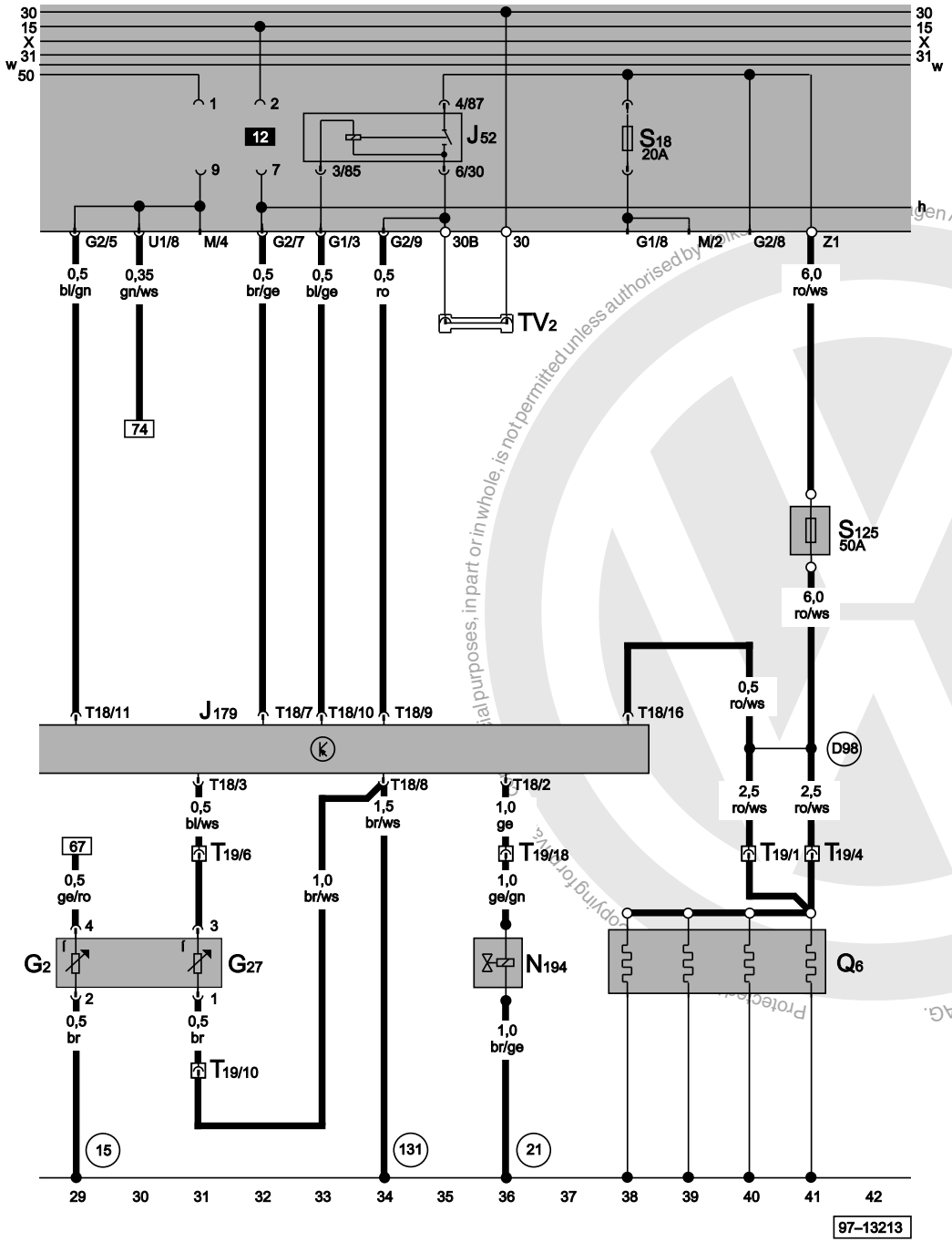

Automatic glow period control unit, engine temperature sender, coolant temperature sender, full load stop valve, glow plugs

G2	Coolant temperature sender
G27	Engine temperature sender
J52	Glow plug relay
J179	Automatic glow period control unit, above the relay plate
N194	Full throttle limit valve
Q6	Glow plugs
S125	Glow plugs fuse, above the relay plate
T18	18-pin connector, on automatic glow period control unit
T19	19-pin connector, on engine
TV2	Terminal 30 junction box
15	Earth point, on cylinder head
21	Earth point, near diesel injection pump
131	Earth connection -2-, in engine compartment wiring harness
D98	Connection (glow plugs), in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li = purple
ge	=	yellow
or	=	orange
rs	=	pink

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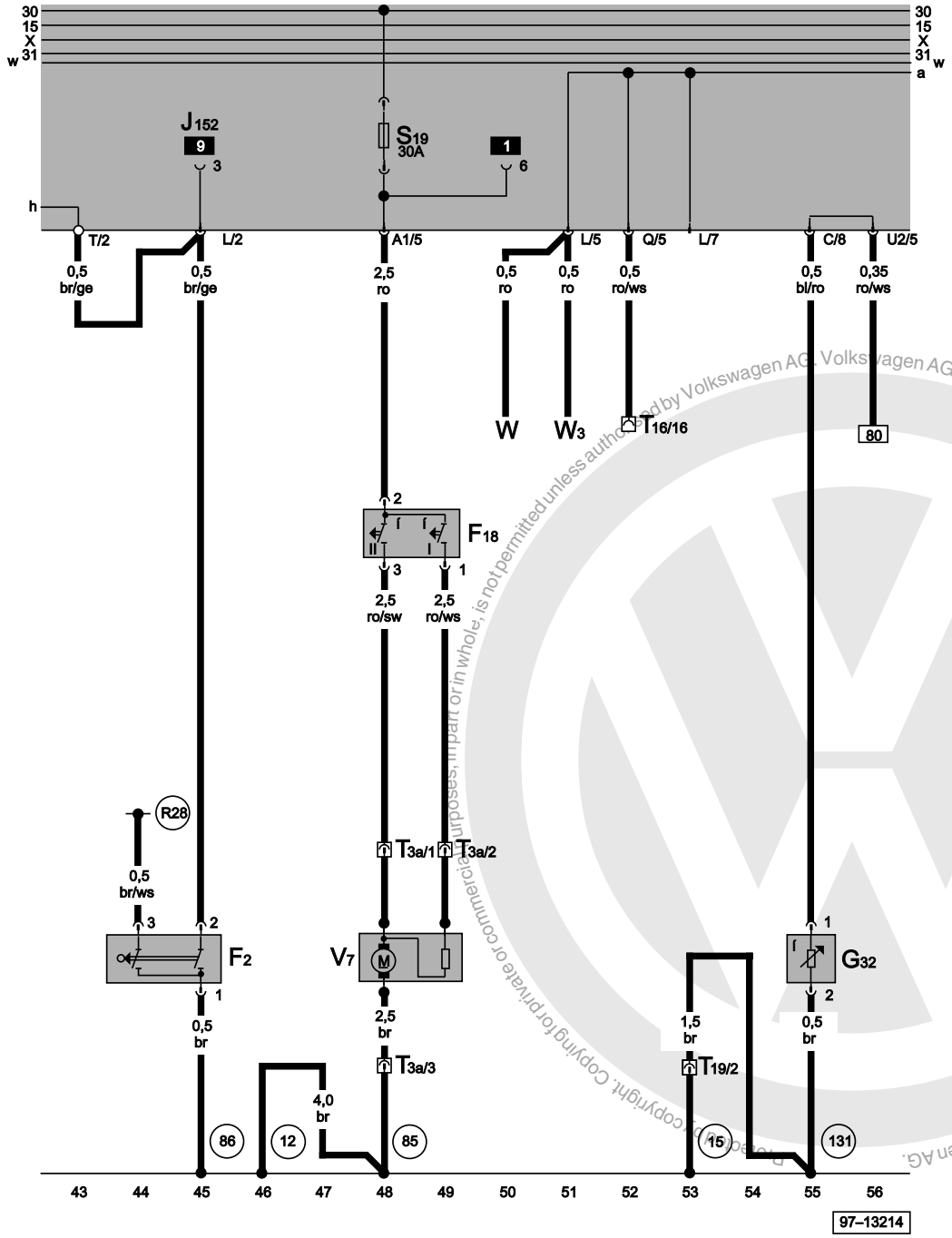

Radiator fan, coolant shortage indicator sender

F2	Door contact switch, driver side
F18	Radiator fan thermo-switch
G32	Coolant shortage indicator sender
J152	Lights switched on warning buzzer
T3a	3-pin connector, on radiator fan
T16	16-pin connector, behind shelf driver's side, - Self-diagnosis connection for V.A.G 1551 -
T19	19-pin connector, on engine
V7	Radiator fan
W	Interior light, front
W3	Luggage compartment light
12	Earth point, left in engine compartment, under battery
15	Earth point, on cylinder head
85	Earth connection -1-, in engine compartment wiring harness
86	Earth connection -1-, in rear wiring harness
131	Earth connection -2-, in engine compartment wiring harness
R28	Connection -2- (door contact switch), in rear wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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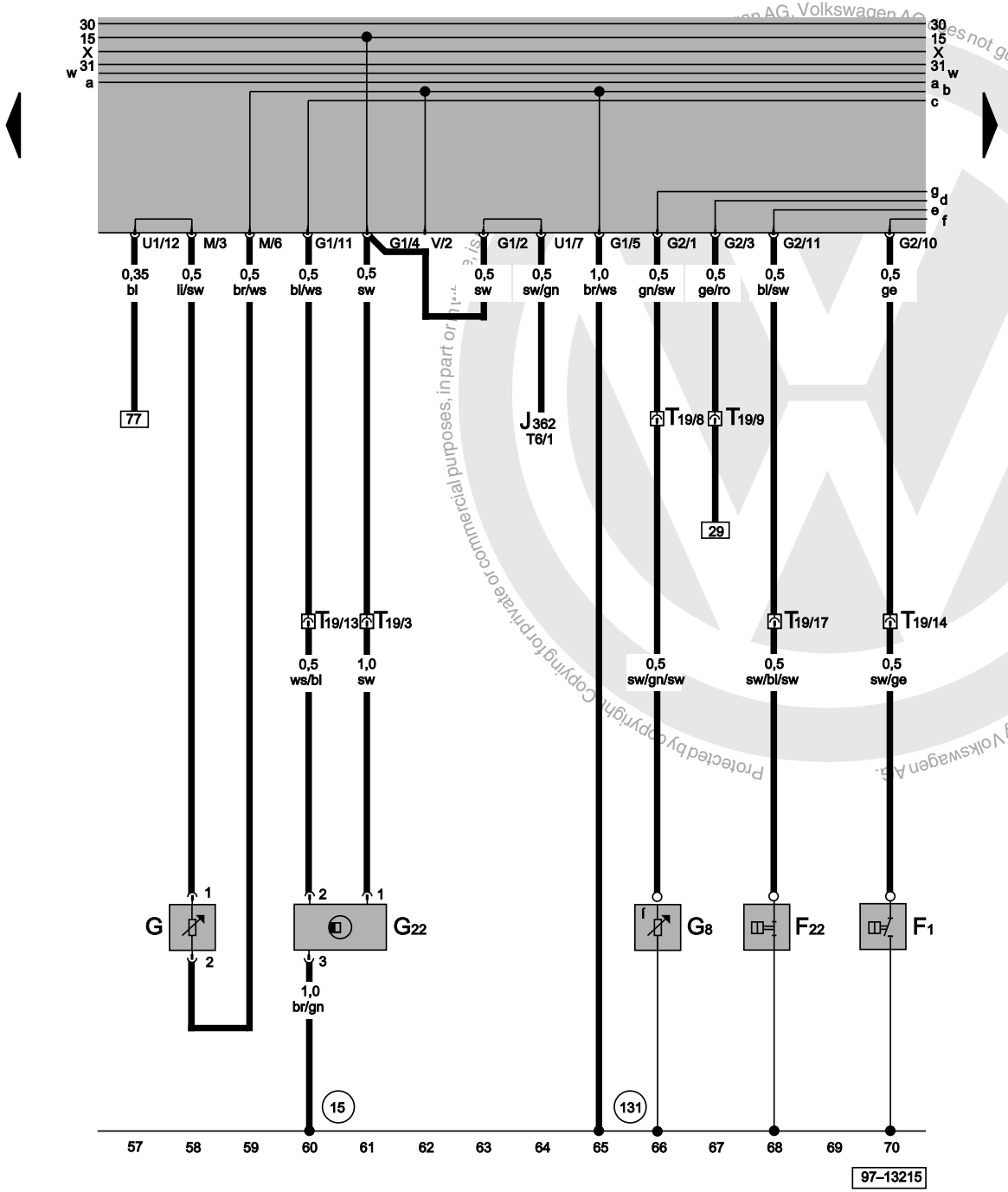

Fuel level sender, speedometer sender, oil temperature sender, oil pressure switch

F1	Oil pressure switch
F22	Oil pressure switch (0.3 bar)
G	Fuel gauge sender
G8	Oil temperature sender
G22	Speedometer sender (Hall sender on gearbox)
J362	Immobilizer control unit, next to steering column
T6	6-pin connector, on immobilizer control unit
T19	19-pin connector, on engine
15	Earth point, on cylinder head
131	Earth connection -2-, in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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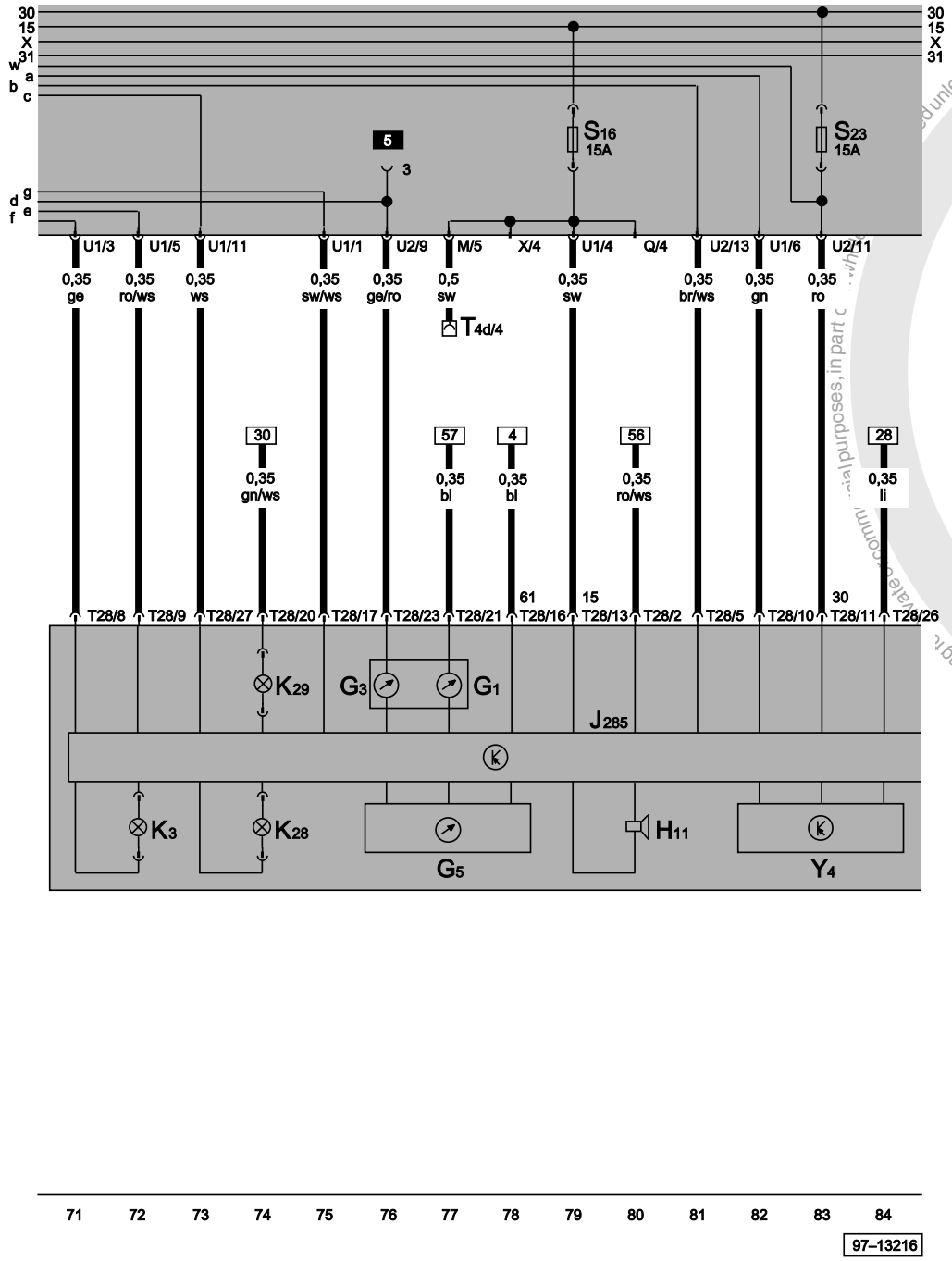

Dash panel insert, fuel gauge, coolant shortage and coolant temperature warning/gauge, optical and acoustic oil pressure warning, odometer display, glow period warning lamp

G1	Fuel gauge
G3	Coolant temperature gauge
G5	Rev. counter
H11	Oil pressure warning buzzer
J285	Control unit with display in dash panel insert
K3	Oil pressure warning lamp
K28	Coolant temperature/coolant shortage warning lamp
K29	Glow period warning lamp
T4d	4-pin connector, behind the relay plate
T28	28-pin connector, on dash panel insert
Y4	Odometer display

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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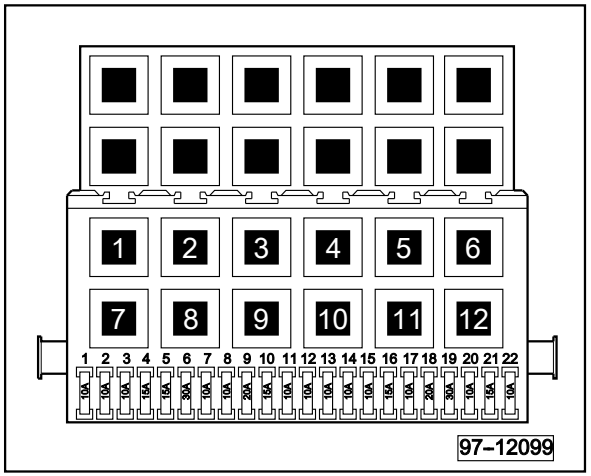
Air conditioning system

⇒ **1.6 ltr. - 1AV /55 kW, engine code AEE (with manual gearbox)**

From August 1995

For alternatives to relay and fuse positions as well as multi-pin connector wiring - see "Fitting locations" section.



1 - Air conditioner relay (147)

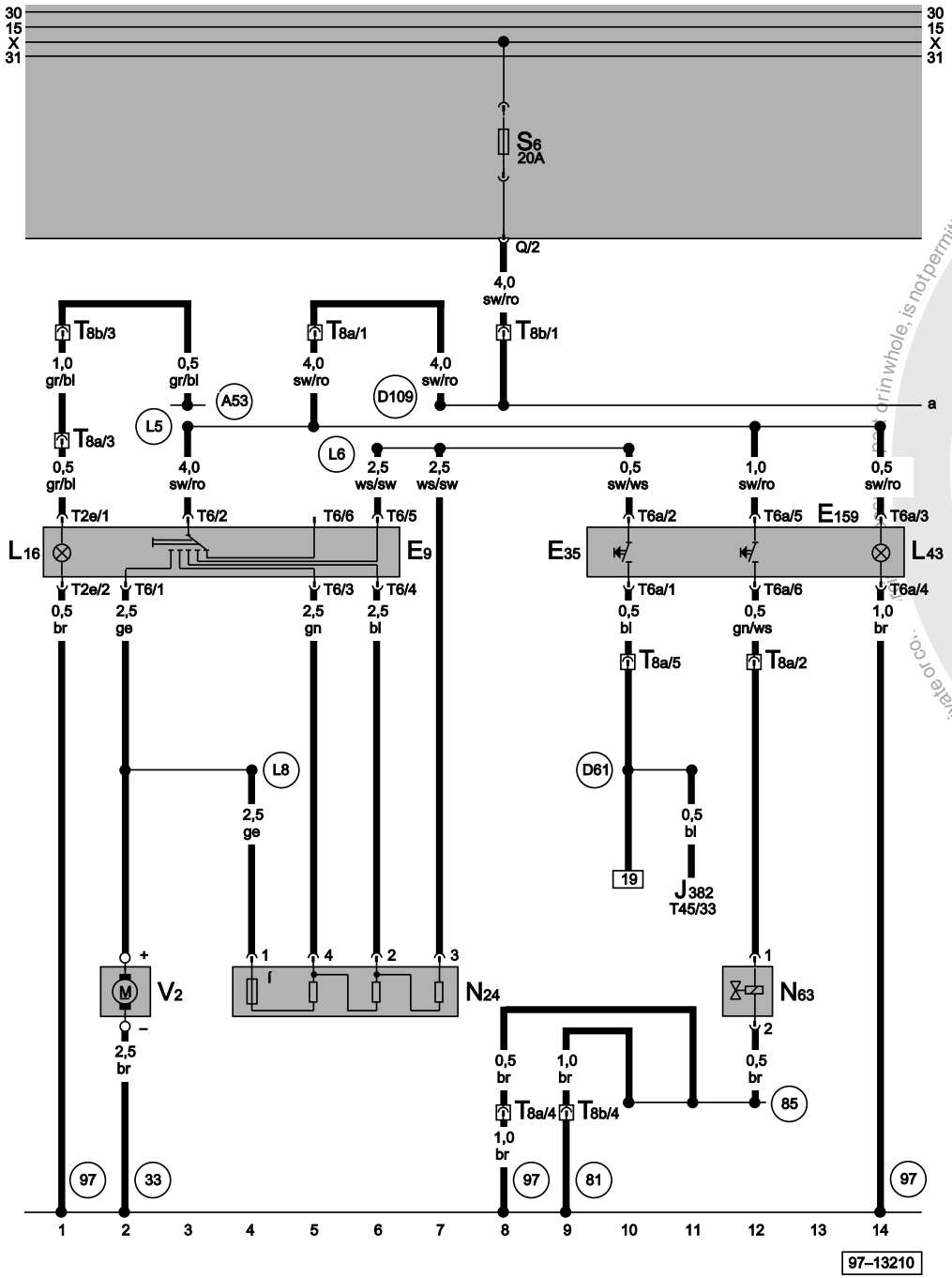
Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red
7.5 A - brown
5 A - beige
3 A - lilac

satelettronica



Fresh air blower switch, air conditioner switch, fresh air and air recirculation switch

E9	Fresh air blower switch
E35	Air conditioner switch
E159	Fresh air and air recirculation switch
J382	1AV control unit (injection system), centre in plenum chamber
L16	Fresh air controls light bulb
L43	Air conditioning system switch light bulb
N24	Fresh air blower with overheating fuse series resistor
N63	Fresh and recirculation air flap two-way valve
T8a	8-pin connector, left behind console
T8b	8-pin connector, left behind console
T45	8-pin connector, on 1AV control unit, (injection system)
V2	Fresh air blower
33	Earth point, behind dash panel, right
81	Earth connection -1-, in dash panel wiring harness
85	Earth connection -1-, in engine compartment wiring harness
97	Earth connection -1-, in air conditioner wiring harness
A53	Positive connection (58b), in dash panel wiring harness
D61	Connection (air conditioner), in engine compartment wiring harness
D109	Connection -7-, in engine compartment wiring harness
L5	Connection -1-, in evaporator housing unit wiring harness
L6	Connection -2-, in evaporator housing unit wiring harness
L8	Connection -4-, in evaporator housing unit wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li = purple
ge = yellow
or = orange
rs = pink

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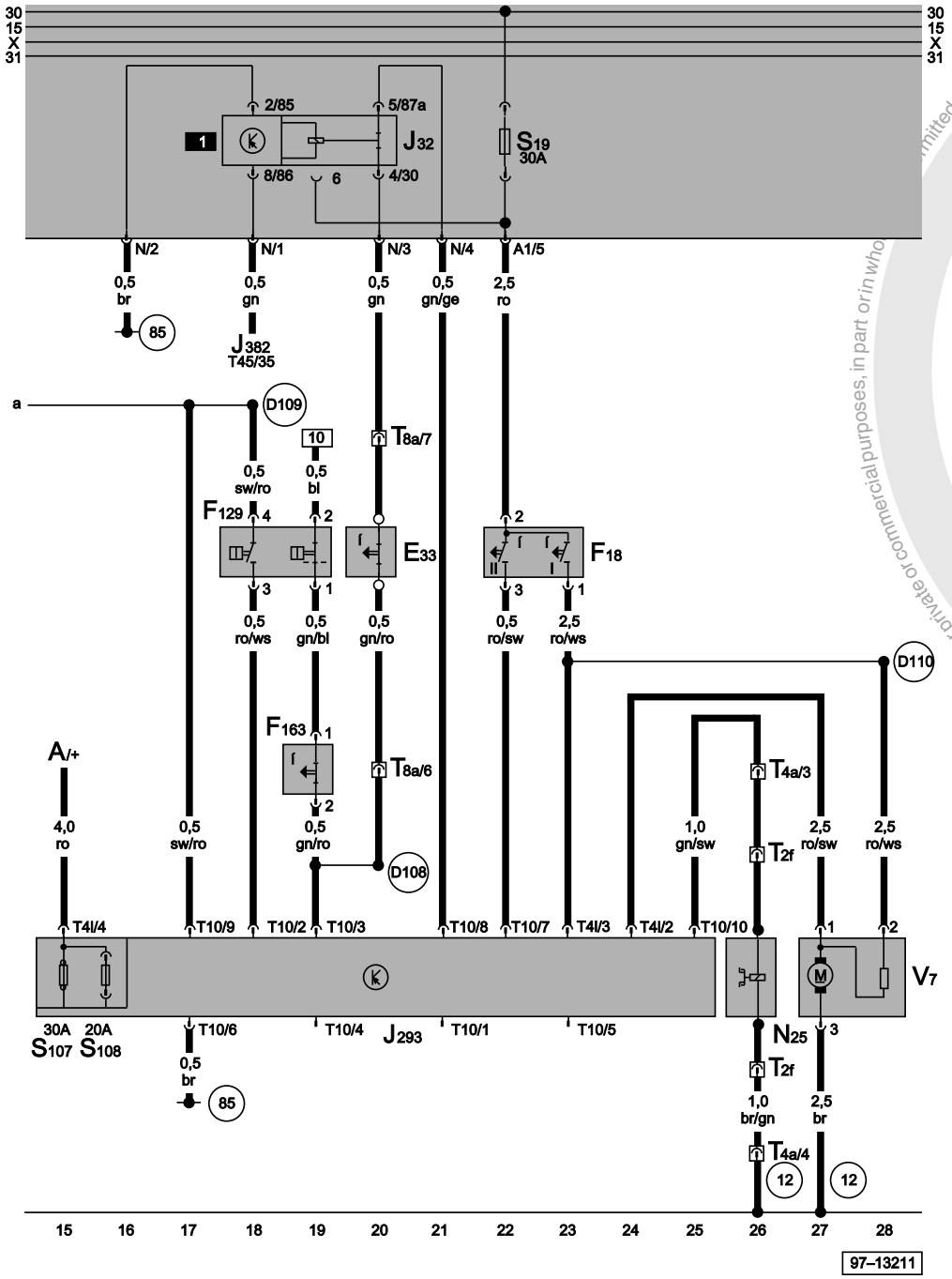

Air conditioner pressure switch, idling speed boost, radiator fan control unit, air conditioner cut-off, radiator fan

A	Battery
E33	Temperature switch for evaporator
F18	Radiator fan thermo-switch
F129	Air conditioner pressure switch
F163	Air conditioner shut-off thermo-switch, centre in engine compartment
J32	Air conditioning system relay
J293	Radiator fan control unit, left in engine compartment
J382	1AV control unit (injection system)
N25	Air conditioning system magnetic coupling
S107	Radiator fan fuse, 2nd speed
S108	Radiator fan 1st speed and magnetic coupling fuse
T2f	2-pin connector, near compressor
T4a	4-pin connector, on gearbox
T4l	4-pin connector, on radiator fan control unit
T8a	8-pin connector, left behind console
T10	10-pin connector, on radiator fan control unit
T45	45-pin connector, on 1AV control unit, (injection system)
V7	Radiator fan
12	Earth point, in engine compartment, left
85	Earth connection -1-, in engine compartment wiring harness
D108	Connection -6-, in engine compartment wiring harness
D109	Connection -7-, in engine compartment wiring harness
D110	Connection -8-, in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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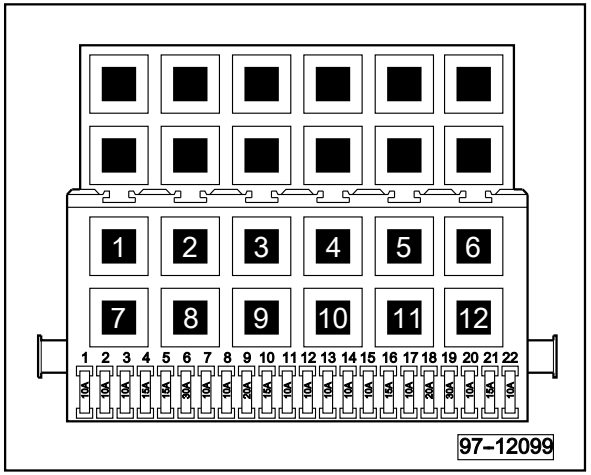
High level brake light

From August 1995

For alternatives to relay and fuse positions as well as multi-pin connector wiring - see "Fitting locations" section.



Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red
7.5 A - brown
5 A - beige
3 A - lilac

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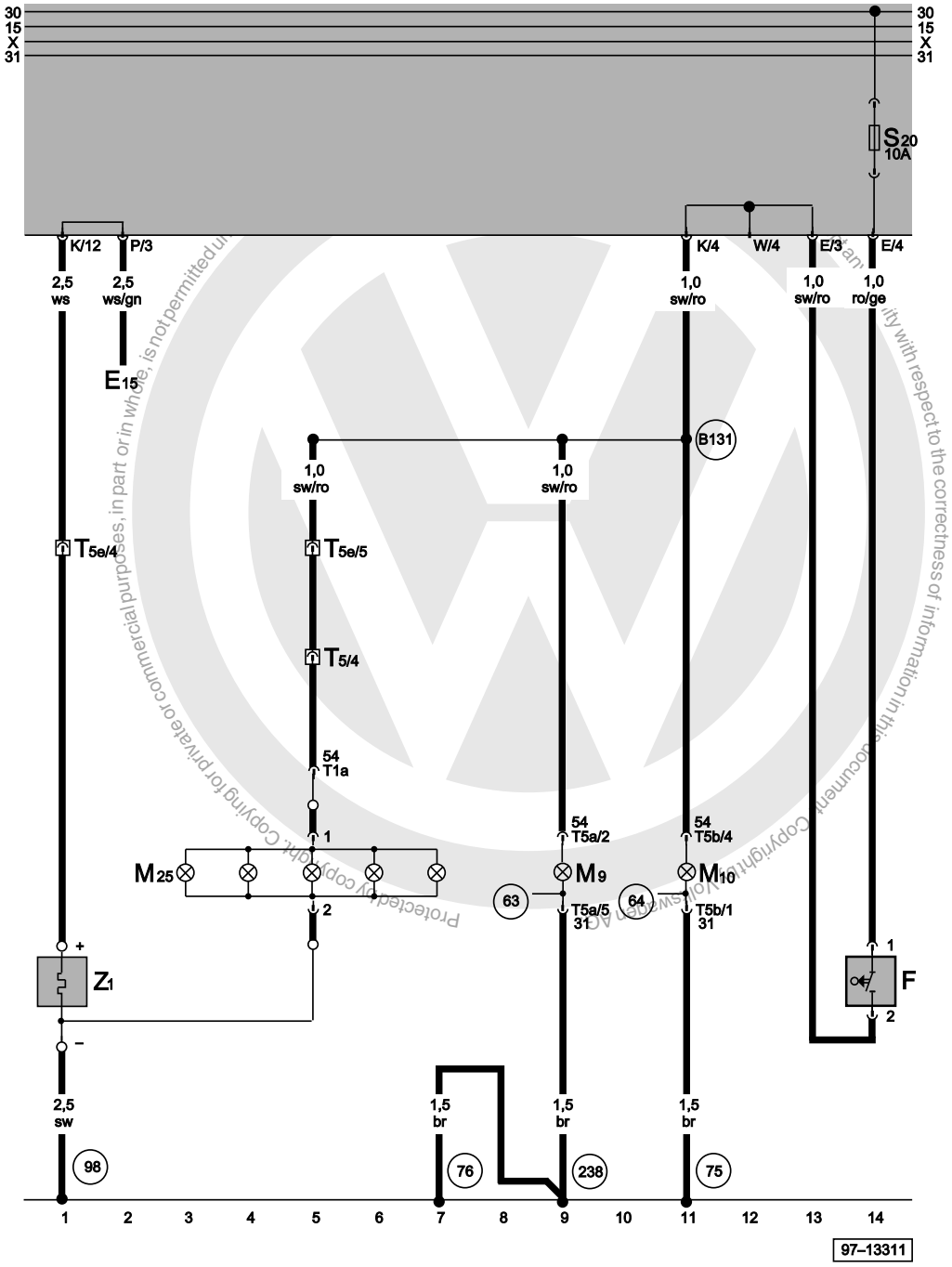

Left brake light, right brake light, high level brake light, heated rear window

E15	Heated rear window switch
F	Brake light switch
M9	Brake light bulb, left
M10	Brake light bulb, right
M25	High level brake light bulb
T1a	Single connector, in tailgate/boot lid
T5	5-pin connector, in tailgate/boot lid
T5a	5-pin connector, left on tail light
T5b	5-pin connector, right on tail light
T5e	5-pin connector, left behind C-pillar trim
Z1	Heated rear window
63	Earth point, right tail light bulb holder
64	Earth point, left tail light bulb holder
75	Earth point, rear pillar, right
76	Earth point, rear pillar, left
98	Earth connection, in tailgate/boot lid wiring harness
238	Earth connection -1-, in interior wiring harness
B131	Connection (54), in interior wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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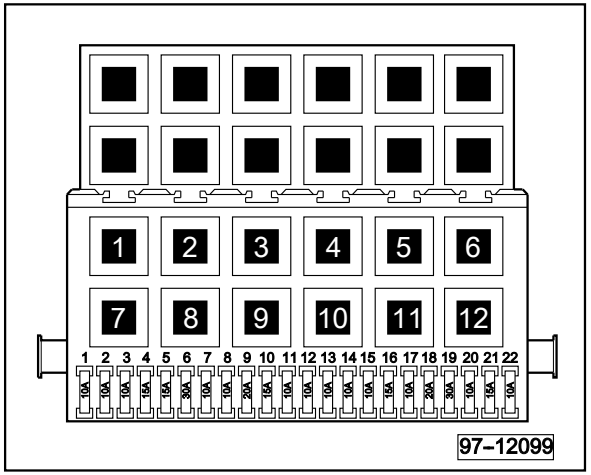
1.9 ltr./47 kW Diesel engine, engine code AEY

From July 1996

For alternatives to relay and fuse positions as well as multi-pin connector wiring - see "Fitting locations" section.



3 - Voltage supply relay - terminal 30 (109)
12 - Glow plugs relay (142)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red
7.5 A - brown
5 A - beige
3 A - lilac

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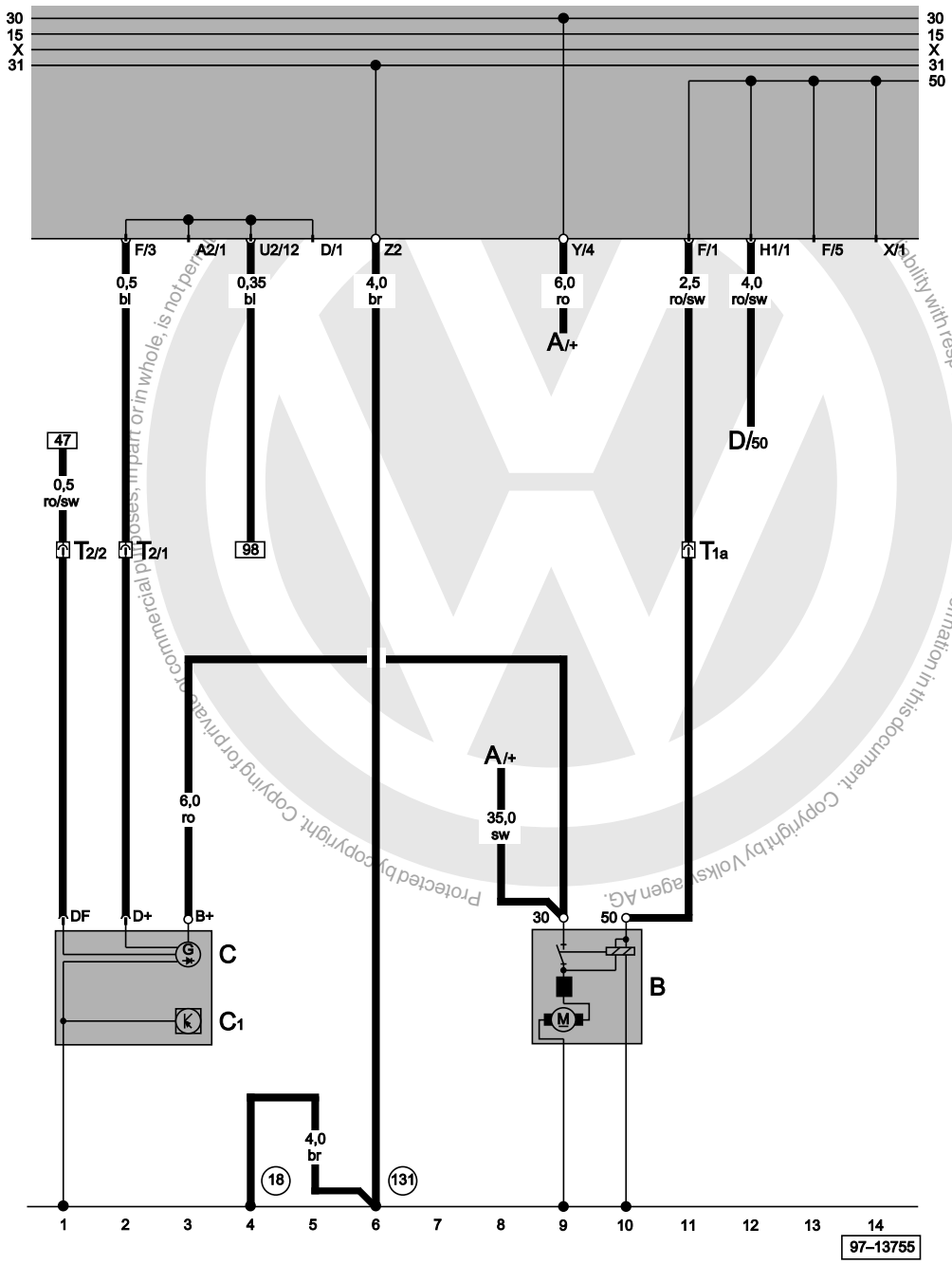

Alternator, starter

A	Battery
B	Starter
C	Alternator
C1	Voltage regulator
D	Ignition/starter switch
T1a	Single connector, behind the relay plate
T2	2-pin connecctor, near starter
18	Earth point, on engine block
131	Earth connection -2-, in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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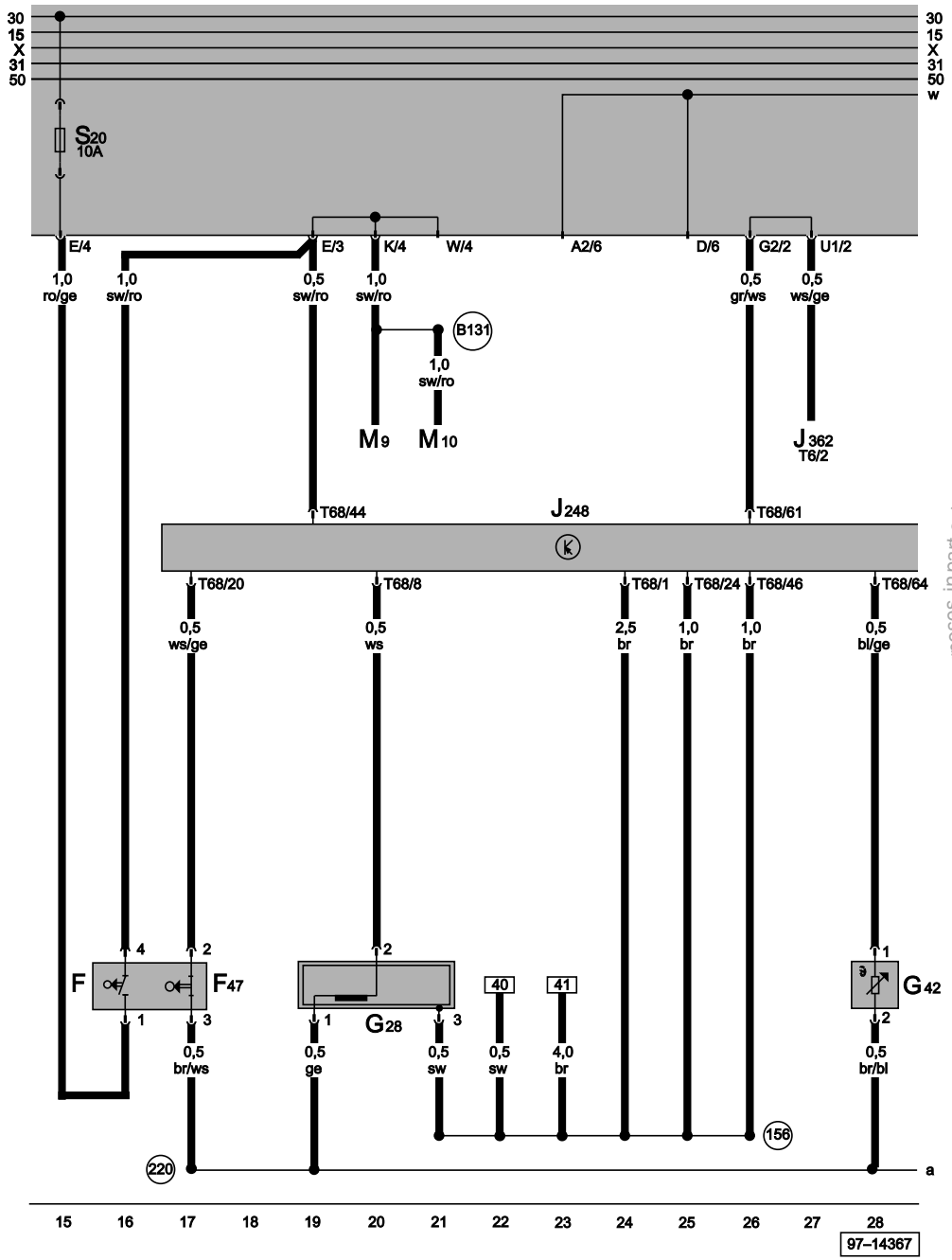

Diesel direct injection system control unit, engine speed sender, air mass meter

F	Brake light switch
F47	Cruise cont. sys. brake pedal switch (diesel direct inj. system)
G28	Engine speed sender
G42	Intake air temperature sender
J248	Diesel direct injection system control unit, left in plenum chamber
J362	Immobilizer control unit
T6	6-pin connector, on immobilizer control unit
T68	68-pin connector, diesel direct injection system control unit
M9	Brake light bulb, left
M10	Brake light bulb, right
156	Earth connection, in diesel direct injection wiring harness
220	Earth connection (sender earth), in engine wiring harness
B131	Connection (54), in interior wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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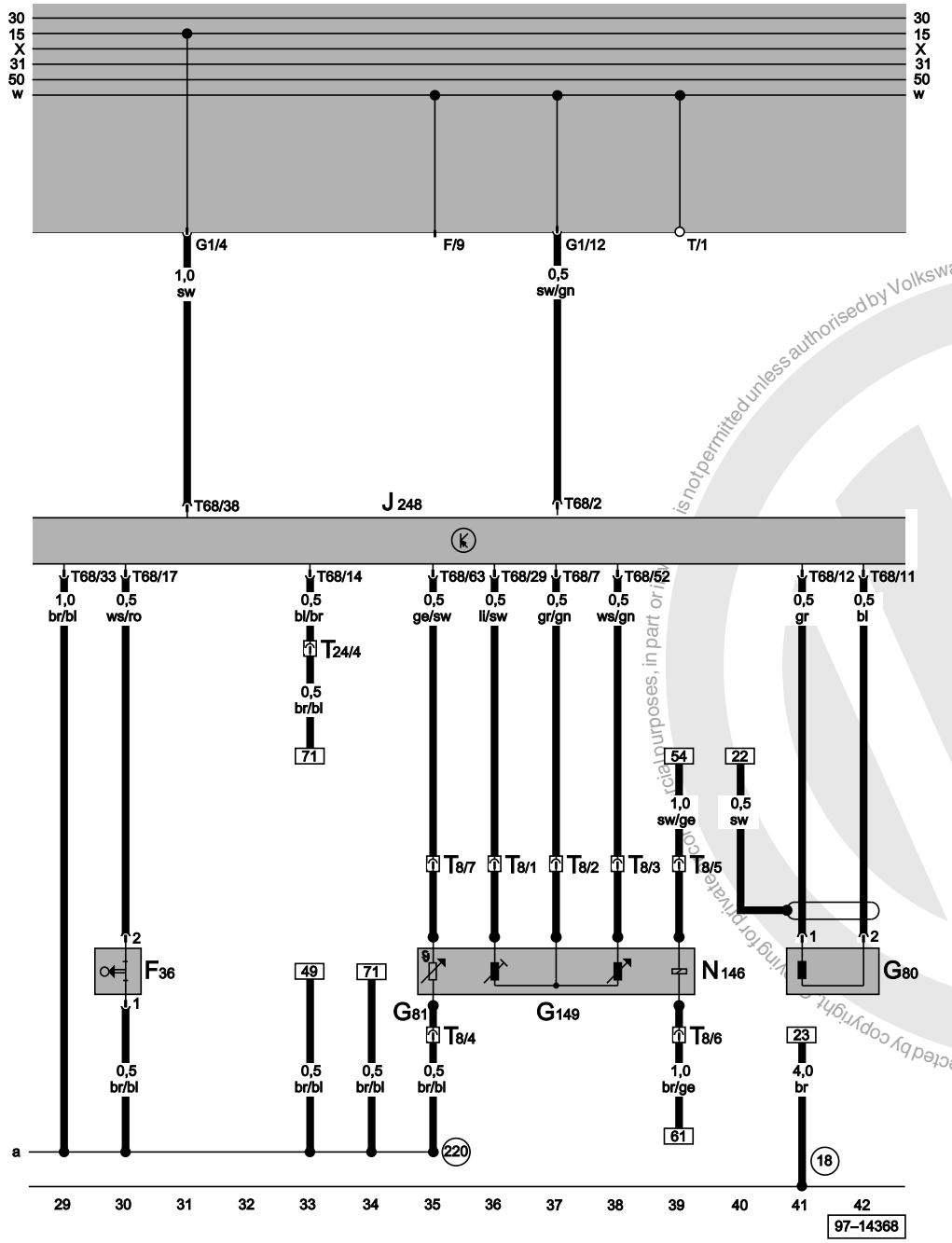

Diesel direct injection system control unit, needle lift sender, modulating piston movement sender

F36	Clutch pedal switch
G80	Needle lift sender
G81	Fuel temperature sender
G149	Modulating piston movement sender
J248	Diesel direct injection system control unit, left in plenum chamber
N146	Metering adjuster
T8	8-pin connector
T24	24-pin connector, on engine
T68	68-pin connector, diesel direct injection system control unit
18	Earth point, on engine block
220	Earth connection (sender earth), in engine wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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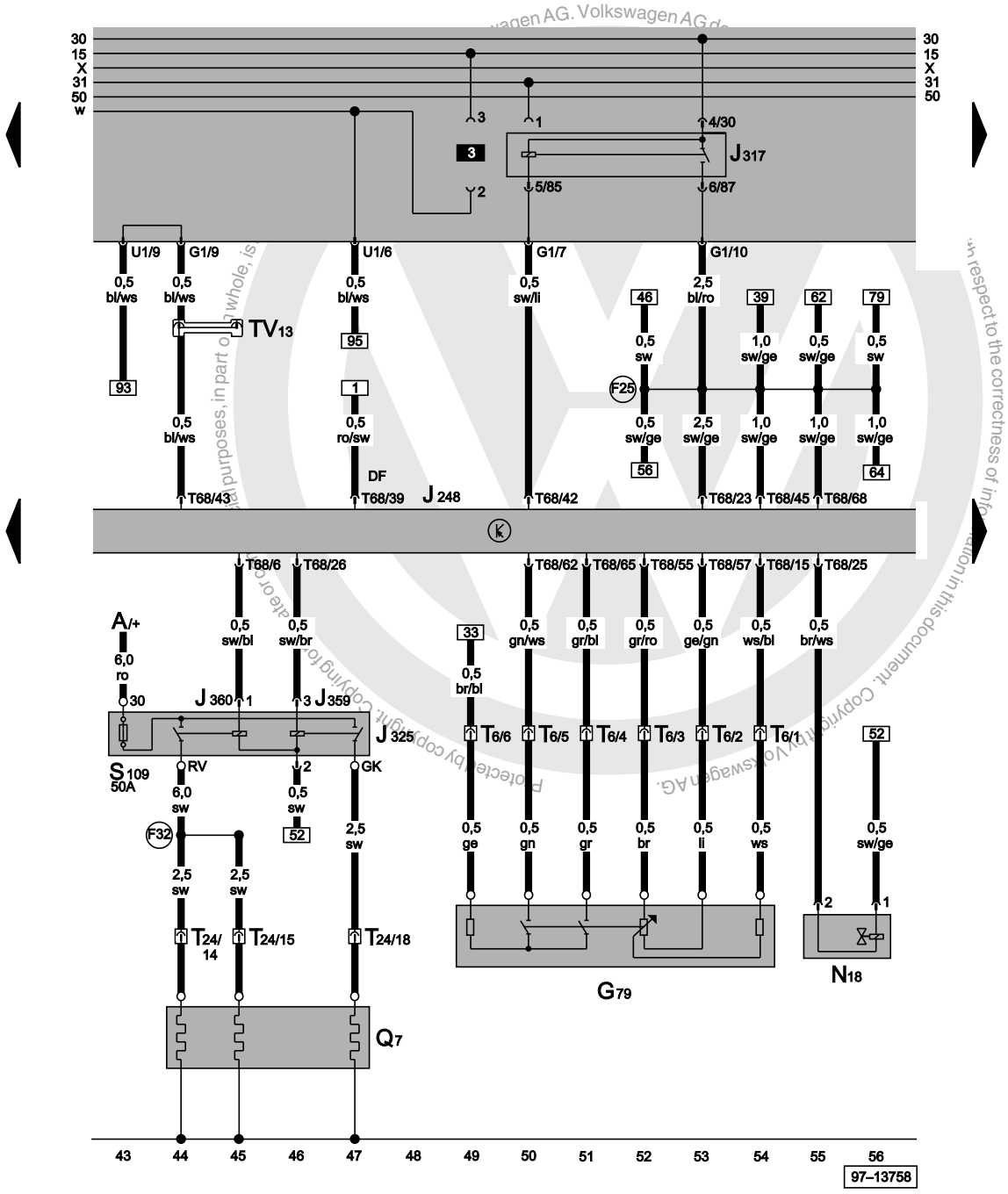
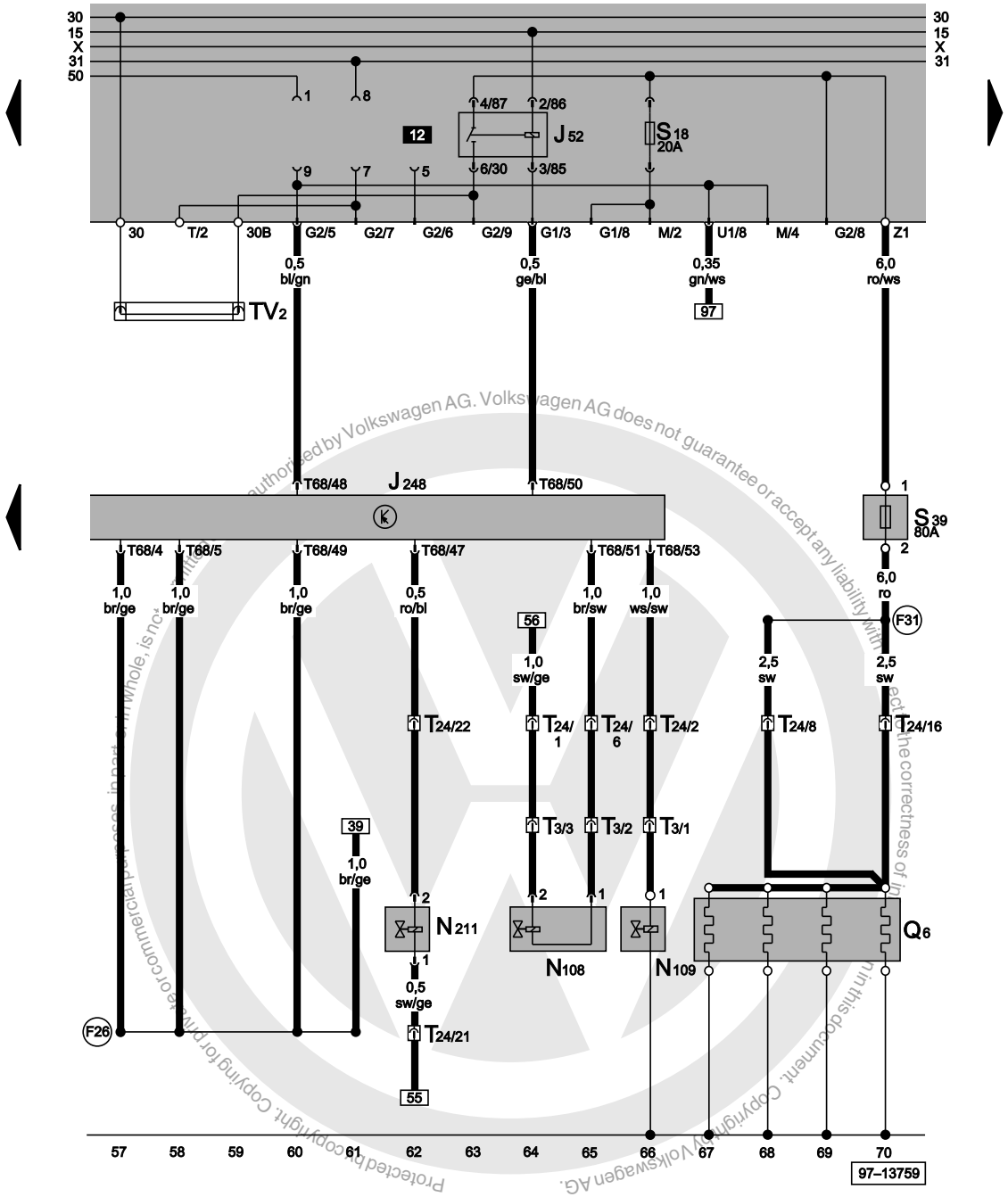


Diesel direct injection system control unit, accelerator pedal position sender, exhaust gas recirculation valve, glow plug coolant

A	Battery
G79	Accelerator pedal position sender
J248	Diesel direct injection system control unit, left in plenum chamber
J317	Terminal 30 voltage supply relay
J325	Coolant heater element relay, on centre of bulkhead
J359	Low heat output relay
J360	High heat output relay
N18	Exhaust gas recirculation valve, front right in engine compartment
Q7	Coolant heating elements
S109	Coolant heater element fuse
T6	6-pin connector, front left in footwell
T24	24-pin connector, left on engine
T68	68-pin connector, on control unit
TV13	Speed signal junction box
F25	Connection -1-, in diesel direct injection system wiring harness
F32	Connection (glow plugs - coolant), in diesel direct injection system wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

satelettronica



Glow plug relay, diesel direct injection system control unit, commencement of injection valve, throttle valve, fuel shut-off valve

J52	Glow plug relay
J248	Diesel direct injection system control unit, left in plenum chamber
N108	Commencement of injection valve
N109	Fuel shut-off valve
N211	Throttle butterfly valve, print-out on fault reader VAG 1551 is: V60
Q6	Glow plugs - (engine)
S39	Glow plug motor strip fuse
T3	3-pin connector
T24	24-pin connector, left on engine
T68	68-pin connector, on control unit
TV2	Terminal 30 junction box
F26	Connection -2-, in diesel direct injection system wiring harness
F31	Connection (glow plugs - engine), in diesel direct injection system wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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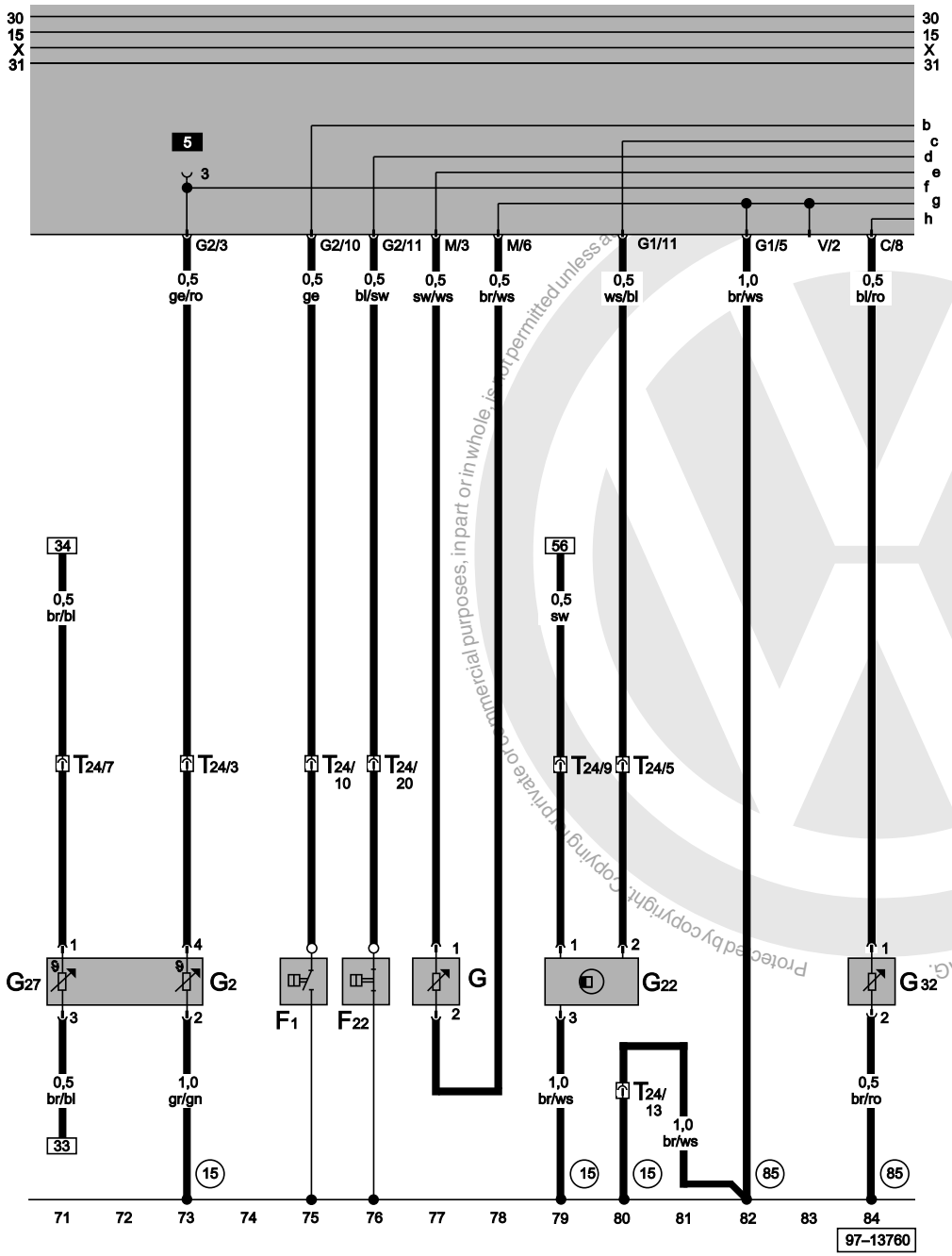

Engine temperature sender, oil pressure switch, speedometer sender

F1	Oil pressure switch *
F22	Oil pressure switch (0.3 bar)
G	Fuel gauge sender
G2	Coolant temerature sender
G22	Speedometer sender (Hall sender on gearbox)
G27	Engine temperature sender
G32	Coolant shortage indicator sender
T24	24-pin connector, left on engine
85	Earth connection -1-, in engine compartment wiring harness
15	Earth point, on cylinder head

* For switching points, see Workshop Manual

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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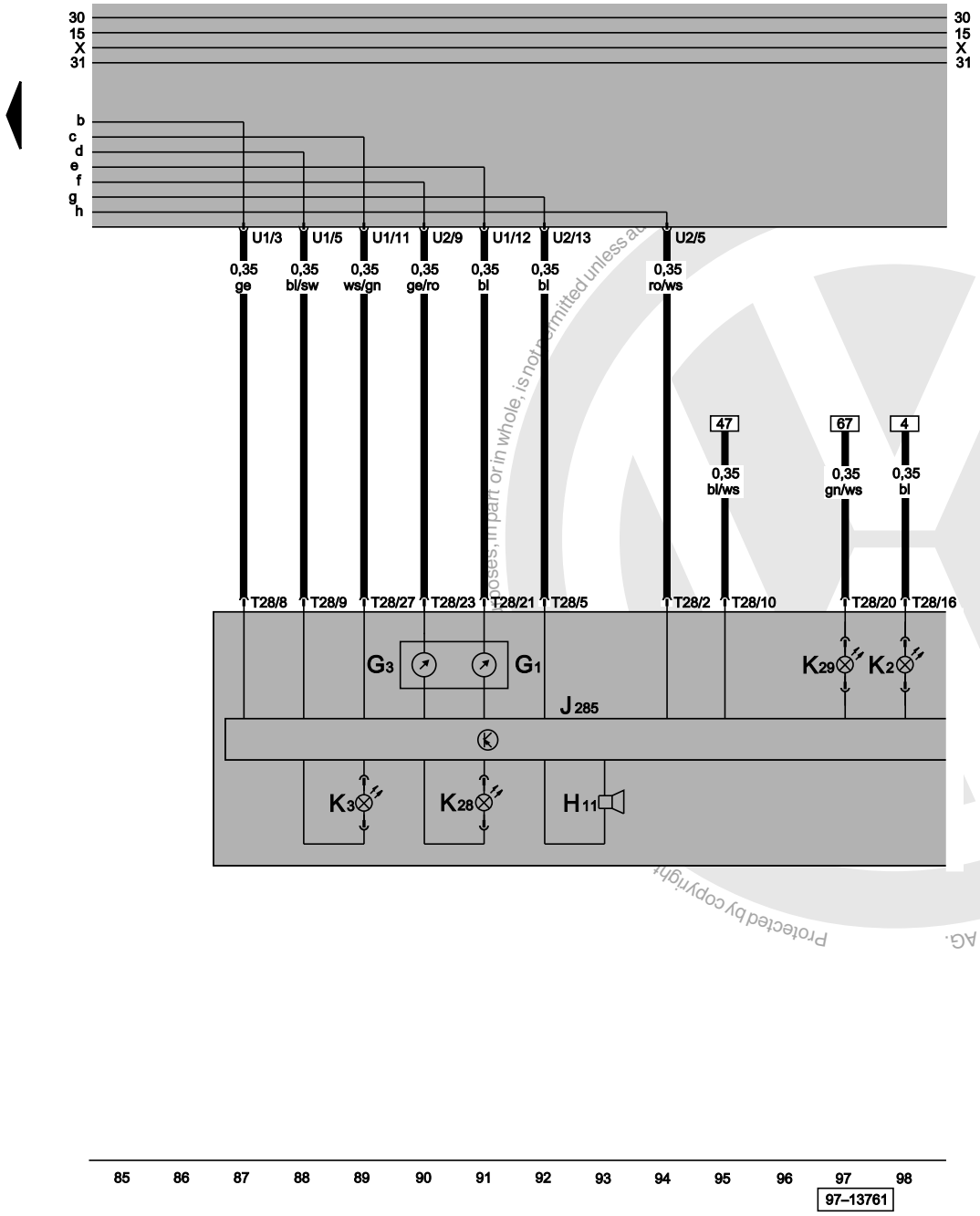

Dash panel insert, fuel gauge, coolant shortage and coolant temperature warning/gauge, optical and acoustic oil pressure warning

G1	Fuel gauge
G3	Coolant temperature gauge
H11	Oil pressure warning buzzer
J285	Control unit with display in dash panel insert
K2	Alternator warning lamp
K3	Oil pressure warning lamp
K28	Coolant temperature/coolant shortage warning lamp
K29	Glow period warning lamp
T28	28-pin connector, on dash panel insert

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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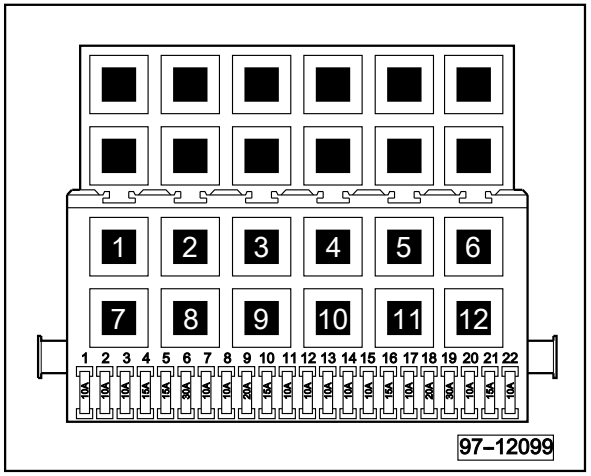
Air conditioning system

⇒ 1.0 ltr./37 kW Motronic, engine code AER, with manual gearbox, from May 1996 • 1.4 ltr. - 1AV /74 kW, engine code AFH, with manual gearbox, from May 1996 • 1.4 ltr./ 44 kW Motronic, engine code AEX, with manual and automatic gearbox, from October 1995 • 1.6 ltr. - 1AV /55 kW, engine code AEE, with manual and automatic gearbox, from October 1995

For alternatives to relay and fuse positions as well as multi-pin connector wiring - see "Fitting locations" section.



1 - Air conditioner relay (147)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red
7.5 A - brown
5 A - beige

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3 A - lilac

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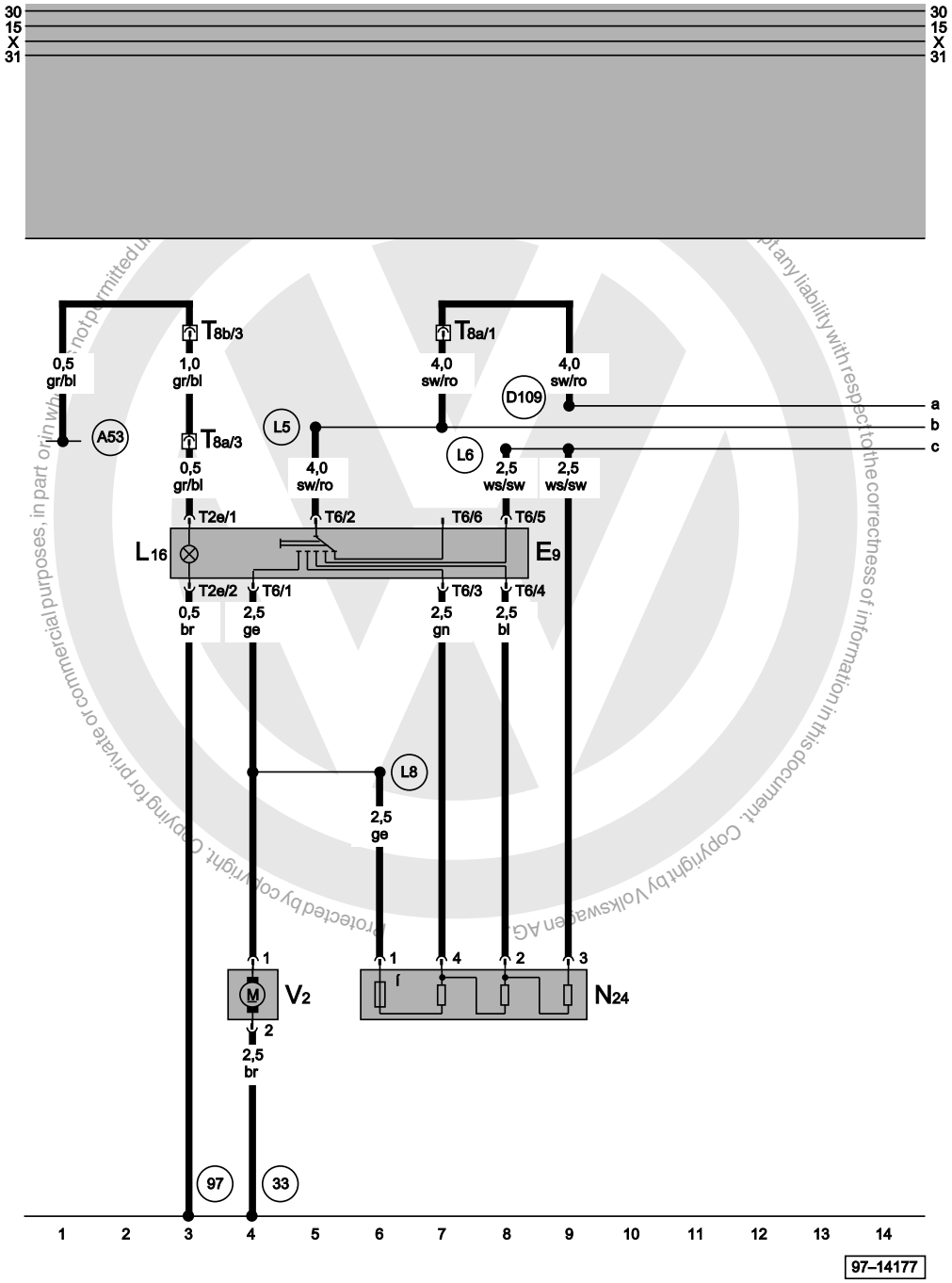
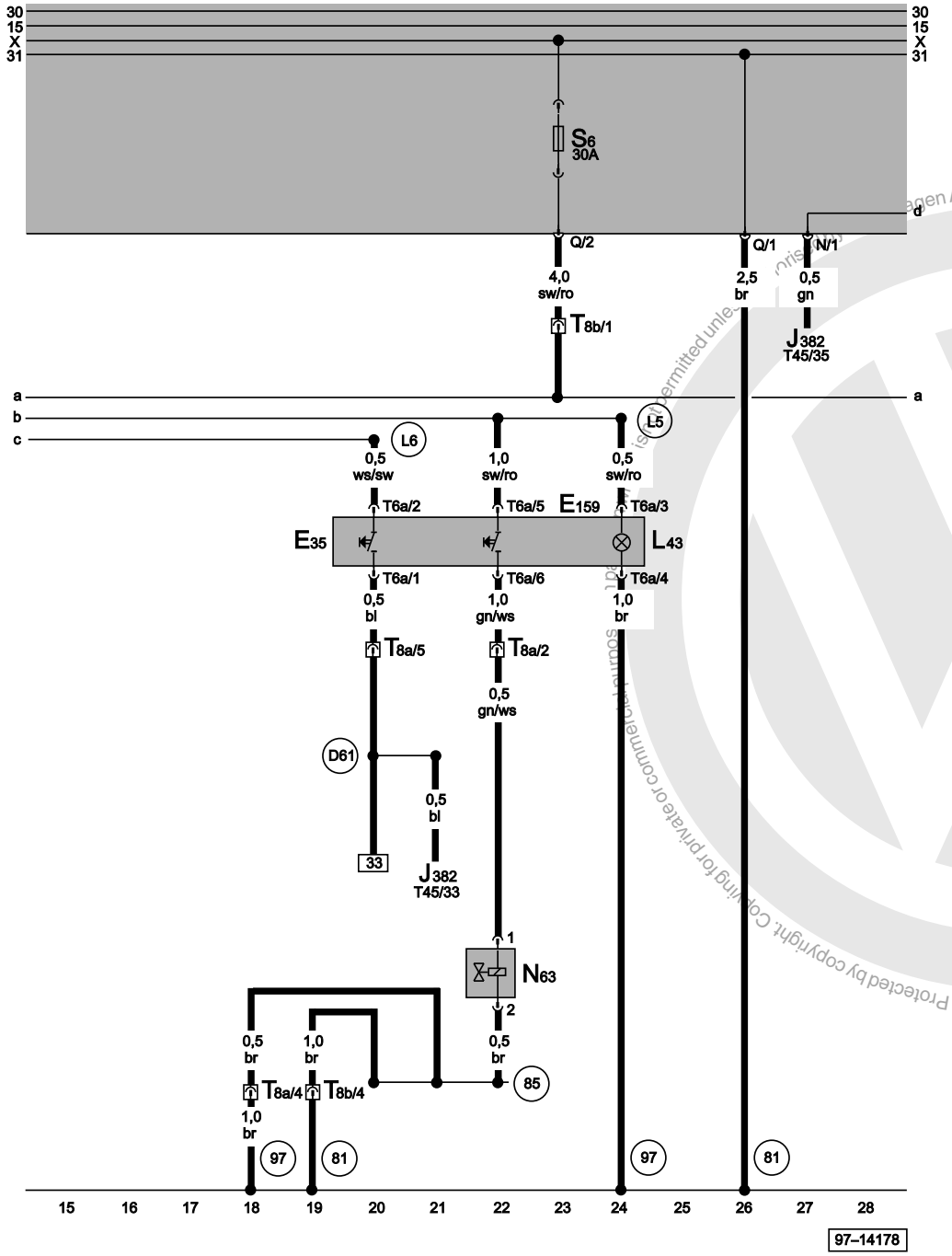


Fresh air blower switch

E9	Fresh air blower switch
L16	Fresh air controls light bulb
N24	Air conditioning system magnetic coupling
T2e	2-pin connector
T6	6-pin connector
T8a	8-pin connector, left behind console
T8b	8-pin connector, left behind console
V2	Fresh air blower
33	Earth point, behind dash panel, right
97	Earth connection -1-, in air conditioner wiring harness
A53	Positive connection (58b), in dash panel wiring harness
D109	Connection -7-, in engine compartment wiring harness
L5	Connection -1-, in evaporator housing unit wiring harness
L6	Connection -2-, in evaporator housing unit wiring harness
L8	Connection -4-, in evaporator housing unit wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li = purple
ge = yellow
or = orange
rs = pink

satelettronica



Air conditioner switch, fresh and recirculating air flap switch

E35	Temperature switch for evaporator
E159	Fresh air and air recirculation switch
J382	1AV control unit (injection system)
L43	Air conditioning system switch light bulb
N63	Fresh and recirculation air flap two-way valve
T6a	6-pin connector
T8a	8-pin connector, left behind console
T8b	8-pin connector, left behind console
T45	1AV control unit (injection system), (chamber 33-'A/C readiness signal', chamber 35 -'A/C on signal')
81	Earth connection -1-, in dash panel wiring harness
85	Earth connection -1-, in engine compartment wiring harness
97	Earth connection -1-, in air conditioner wiring harness
D61	Connection (air conditioner), in engine compartment wiring harness
L5	Connection -1-, in evaporator housing unit wiring harness
L6	Connection -2-, in evaporator housing unit wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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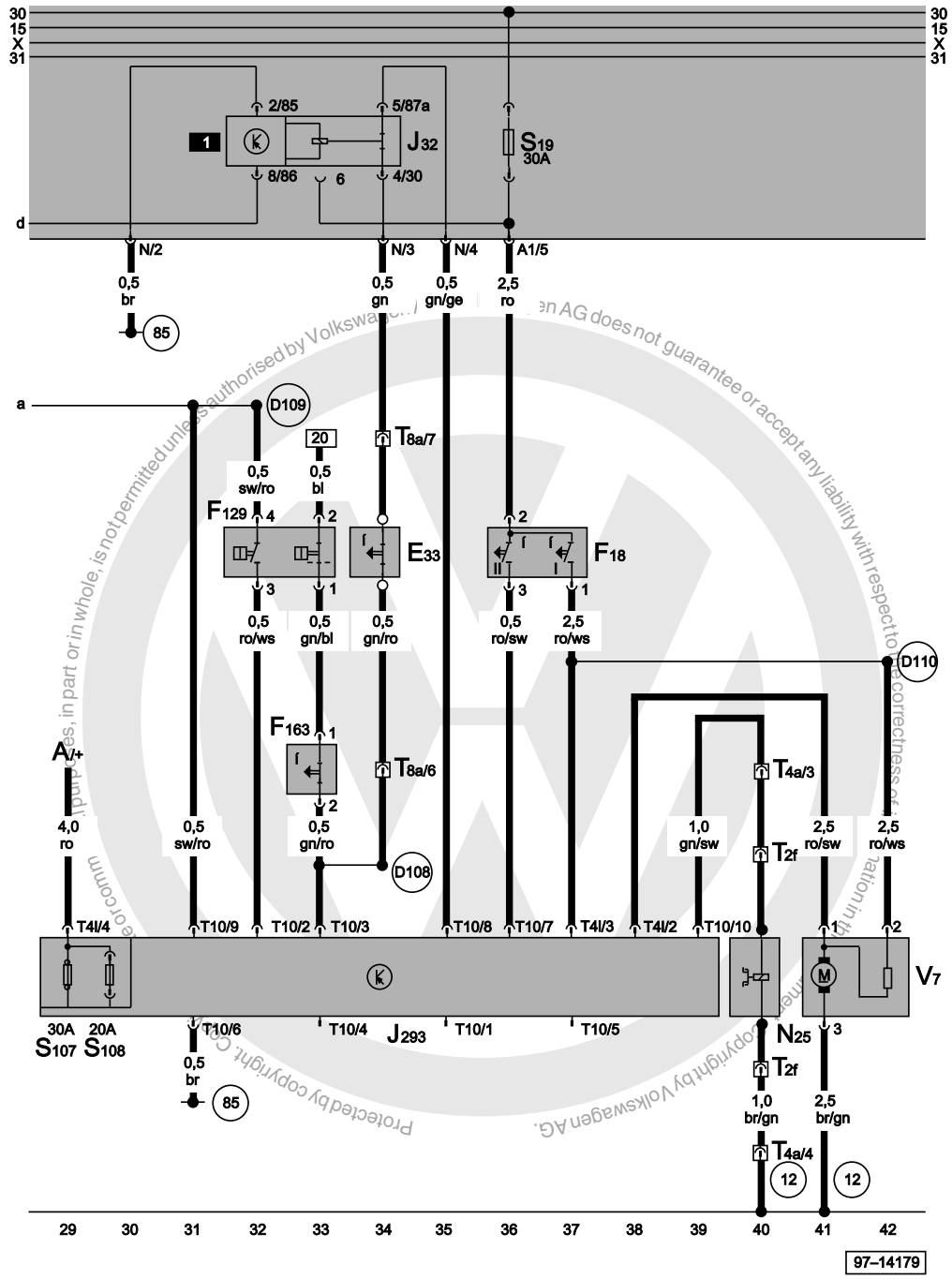

Air conditioner pressure switch, idling speed boost, radiator fan control unit, air conditioner shut-off, radiator fan

A	Battery
E33	Temperature switch for evaporator
F18	Radiator fan thermo-switch
F129	Air conditioner pressure switch
F163	Air conditioner shut-off thermo-switch, centre in engine compartment
J32	Air conditioning system relay
J293	Radiator fan control unit, left in engine compartment
N25	Air conditioning system magnetic coupling
S107	Radiator fan fuse, 2nd speed
S106	Radiator fan 1st speed and magnetic coupling fuse
T2f	2-pin connector, near compressor
T4a	4-pin connector, on gearbox
T4l	4-pin connector
T8a	8-pin connector, left behind console
T10	10-pin connector
V7	Radiator fan
12	Earth point, in engine compartment, left
85	Earth connection -1-, in engine compartment wiring harness
D108	Connection -6-, in engine compartment wiring harness
D109	Connection -7-, in engine compartment wiring harness
D110	Connection -8-, in engine compartment wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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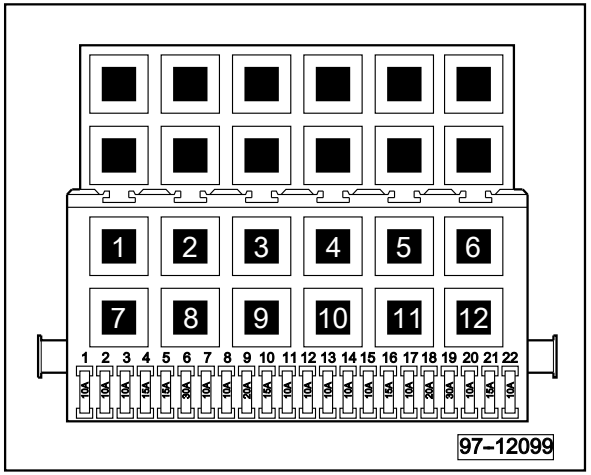
Anti-locking brake system (ABS), LHD only

From November 1996

For alternatives to relay and fuse positions as well as multi-pin connector wiring - see "Fitting locations" section.



4 - X contact relief relay (18)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red
7.5 A - brown
5 A - beige
3 A - lilac

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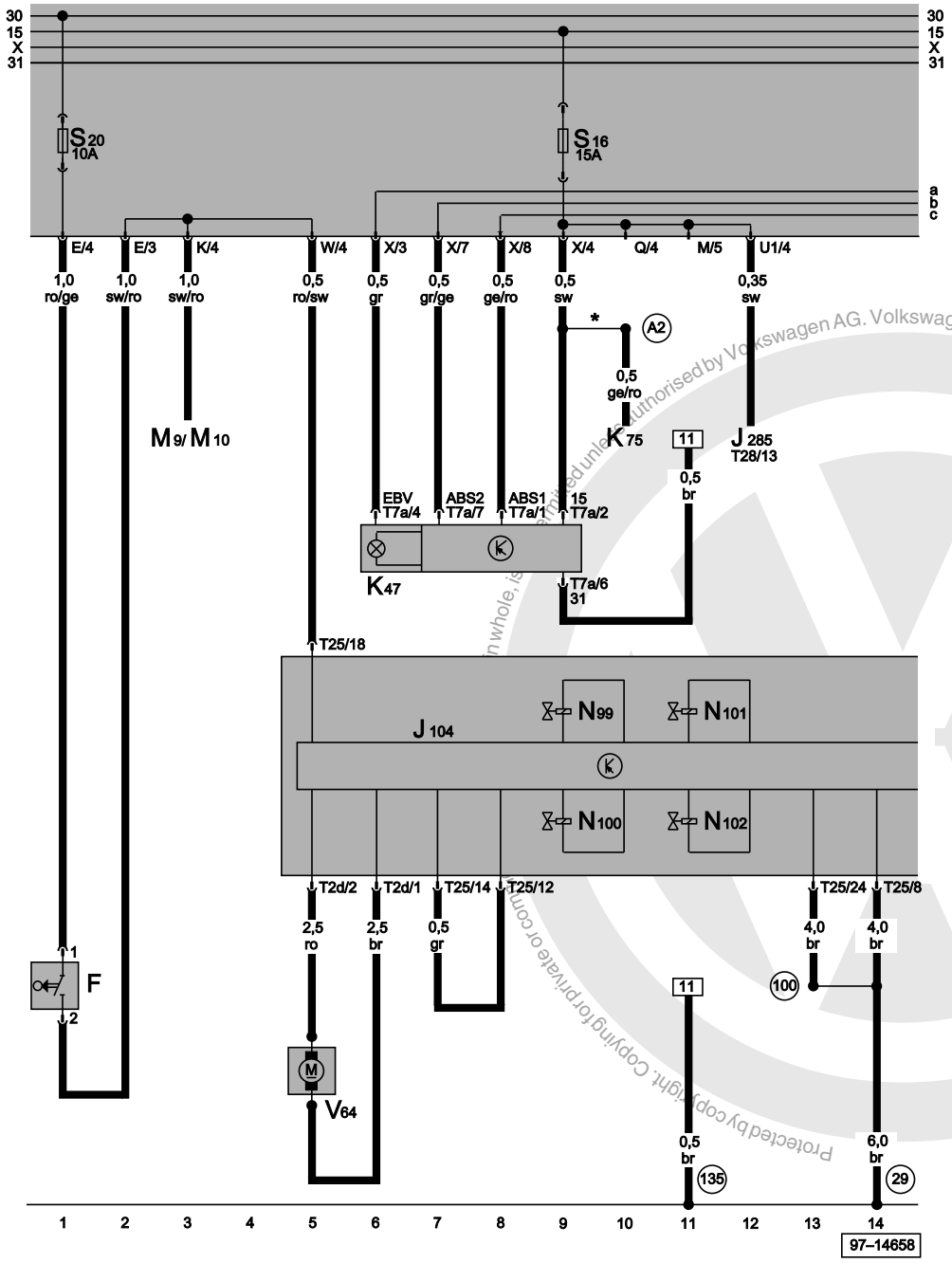

ABS control unit, brake light switch

F	Brake light switch
J104	ABS control unit, left in engine compartment
J285	Control unit with display in dash panel insert
K47	ABS warning lamp
K75	Airbag warning lamp
M9	Brake light bulb, left
M10	Brake light bulb, right
N99	ABS inlet valve, front right
N100	ABS outlet valve, front right
N101	ABS inlet valve, front left
N102	ABS outlet valve, front left
T2d	2-pin connector, on ABS control unit
T7a	7-pin connector, on ABS warning lamp
T25	25-pin connector, on ABS control unit
T28	28-pin connector, in dash panel insert
V64	ABS hydraulic pump, on ABS control unit
29	Earth point, near battery
100	Earth connection -1-, in ABS wiring harness
135	Earth connection -2-, in dash panel wiring harness
A2	Positive (+) connection (15), in dash panel wiring harness
*	Wiring connector only on vehicles with airbag

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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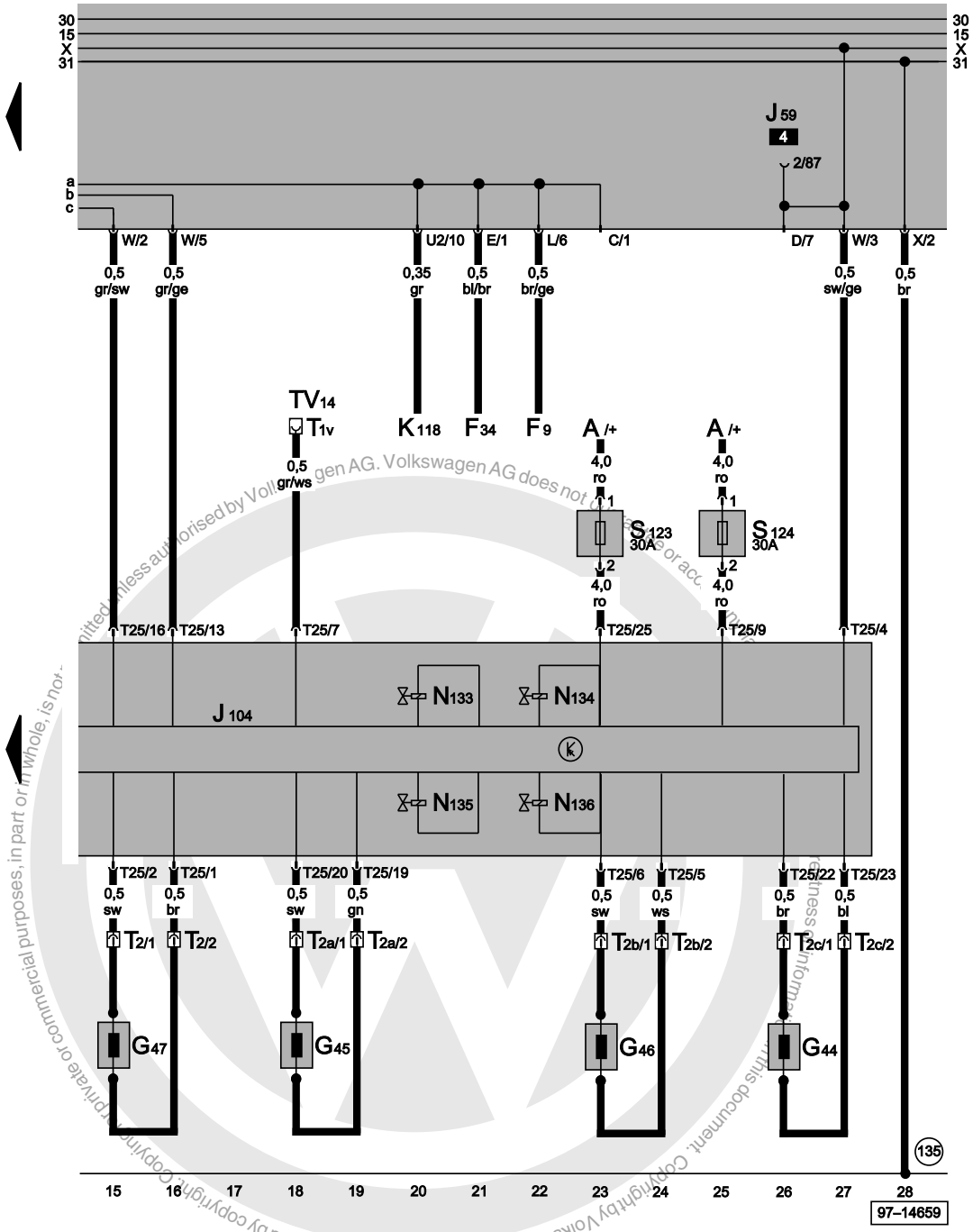

ABS control unit, injectors

A	Battery
F9	Handbrake warning switch
F34	Brake fluid level warning contact
G44	Rear right speed sensor
G45	Front right speed sensor
G46	Rear left speed sensor
G47	Front left speed sensor
J59	X contact relief relay
J104	ABS control unit, left in engine compartment
K118	Brake system warning lamp, in dash panel insert
N133	ABS inlet valve, rear right
N134	ABS inlet valve, rear left
N135	ABS outlet valve, rear right
N136	ABS outlet valve, rear left
S123	ABS control unit fuse 1
S124	ABS control unit fuse 2
T1v	Single connector
T2	2-pin connector, behind left suspension strut
T2a	2-pin connector, behind right suspension strut
T2b	2-pin connector, under rear seat bench
T2c	2-pin connector, under rear seat bench
T25	25-pin connector, on ABS control unit
TV14	Self-diagnosis junction box, above the relay plate
135	Earth connection -2-, in dash panel wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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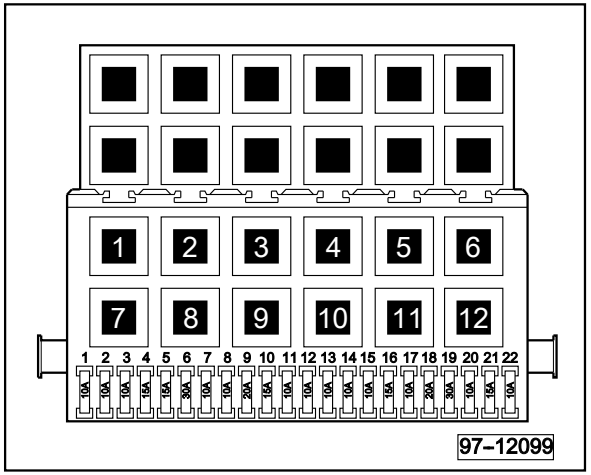
Anti-locking brake system (ABS), RHD only

From November 1996

For alternatives to relay and fuse positions as well as multi-pin connector wiring - see "Fitting locations" section.



4 - X contact relief relay (18)

Notes!

- *The number in brackets behind the part designation*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red
7.5 A - brown
5 A - beige
3 A - lilac

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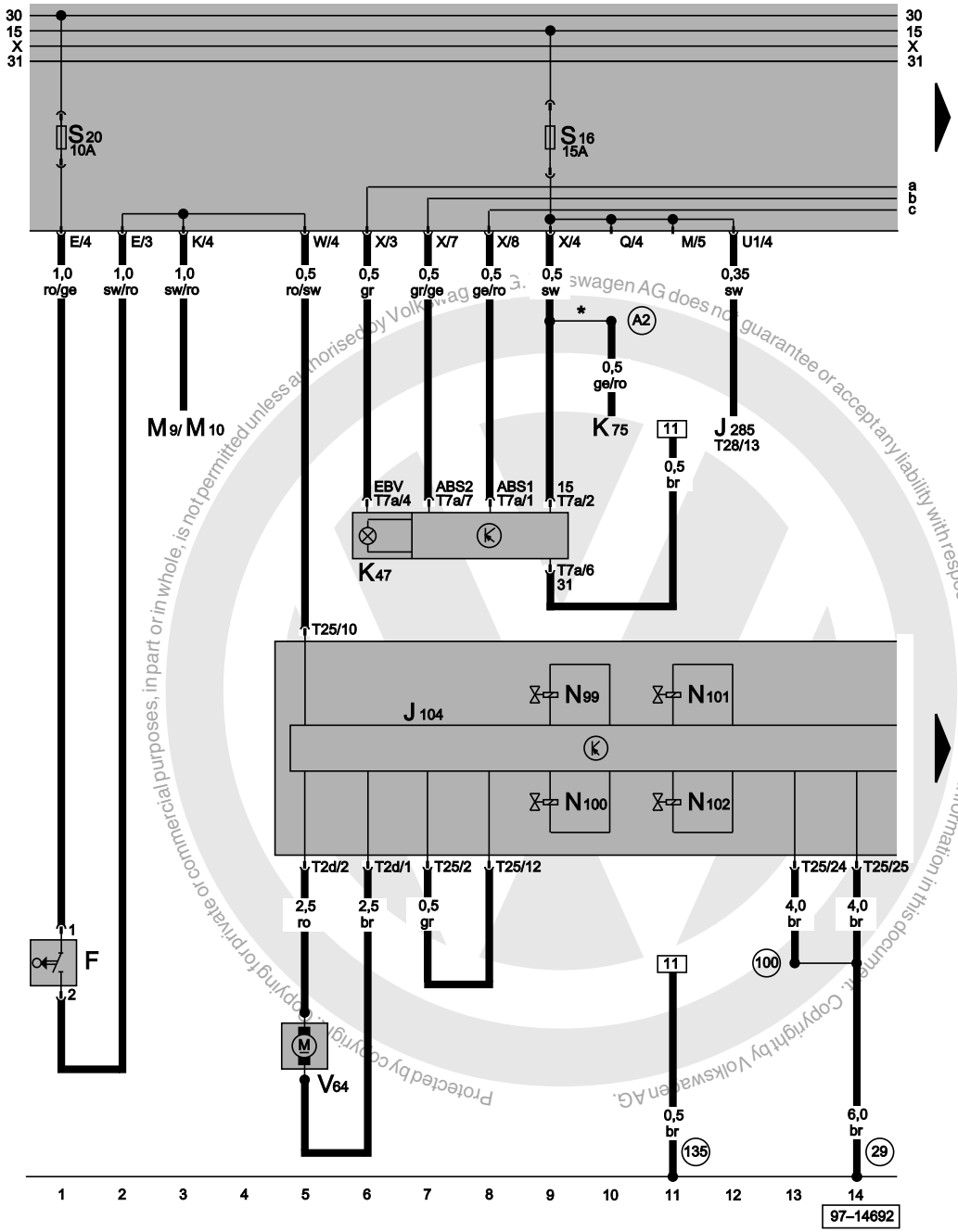

ABS control unit, brake light switch

F	Brake light switch
J104	ABS control unit, left in engine compartment
J285	Control unit with display in dash panel insert
K47	ABS warning lamp
K75	Airbag warning lamp
M9	Brake light bulb, left
M10	Brake light bulb, right
N99	ABS inlet valve, front right
N100	ABS outlet valve, front right
N101	ABS inlet valve, front left
N102	ABS outlet valve, front left
T2d	2-pin connector, on ABS control unit
T7a	7-pin connector, on ABS warning lamp
T25	25-pin connector, on ABS control unit
T28	28-pin connector, in dash panel insert
V64	ABS hydraulic pump, on ABS control unit
29	Earth point, near battery
100	Earth connection -1-, in ABS wiring harness
135	Earth connection -2-, in dash panel wiring harness
A2	Positive (+) connection (15), in dash panel wiring harness
*	Wiring connector only on vehicles with airbag

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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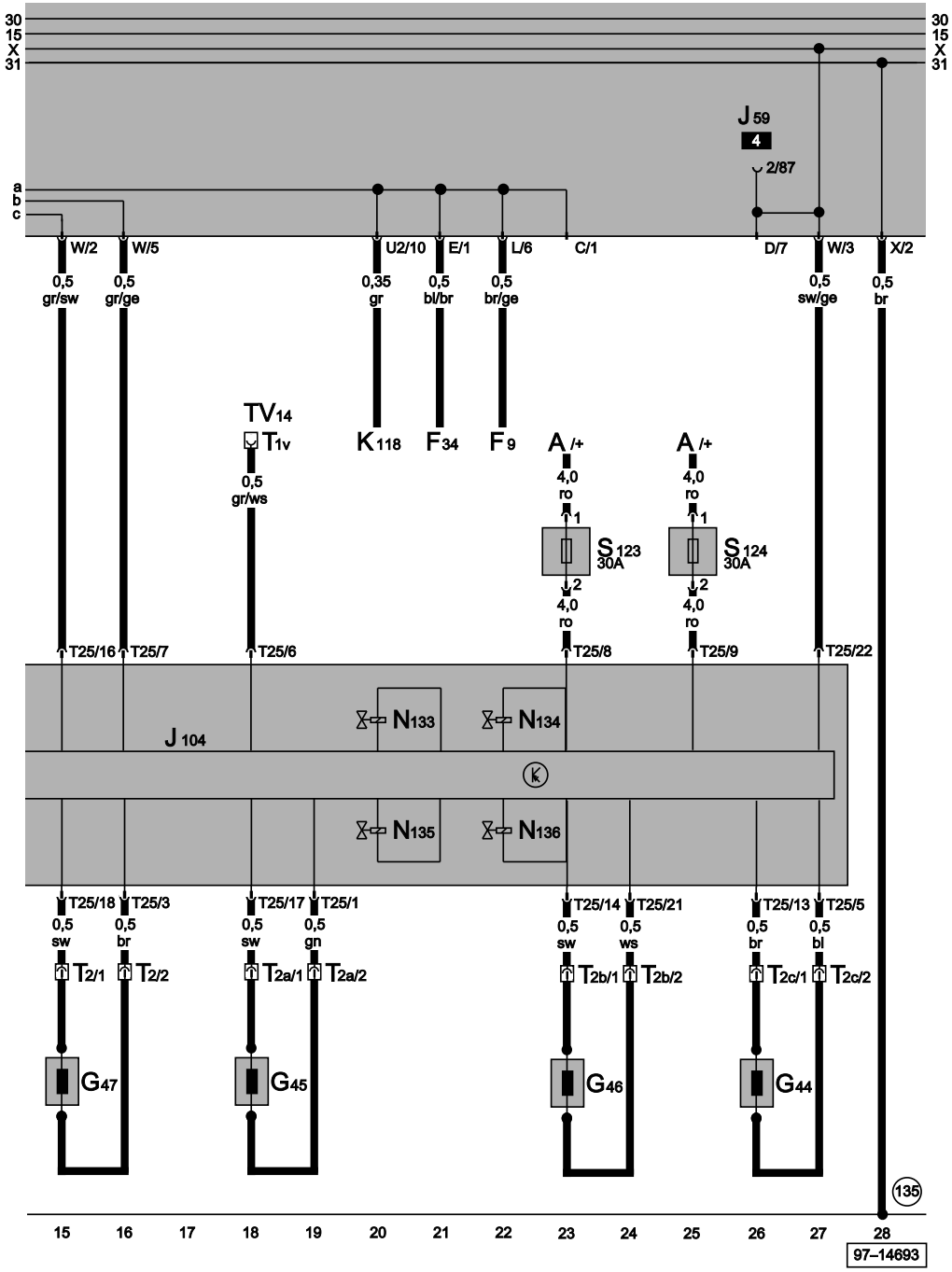

ABS control unit, injectors

A	Battery
F9	Handbrake warning switch
F34	Brake fluid level warning contact
G44	Rear right speed sensor
G45	Front right speed sensor
G46	Rear left speed sensor
G47	Front left speed sensor
J59	X contact relief relay
J104	ABS control unit, left in engine compartment
K118	Brake system warning lamp, in dash panel insert
N133	ABS inlet valve, rear right
N134	ABS inlet valve, rear left
N135	ABS outlet valve, rear right
N136	ABS outlet valve, rear left
S123	ABS control unit fuse 1
S124	ABS control unit fuse 2
T1v	Single connector
T2	2-pin connector, behind left suspension strut
T2a	2-pin connector, behind right suspension strut
T2b	2-pin connector, under rear seat bench
T2c	2-pin connector, under rear seat bench
T25	25-pin connector, on ABS control unit
TV14	Self-diagnosis junction box, above the relay plate
135	Earth connection -2-, in dash panel wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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1.4 ltr./44 kW Motronic, engine code AEX, 1.6 ltr. - 1AV /55 kW, engine code AEE

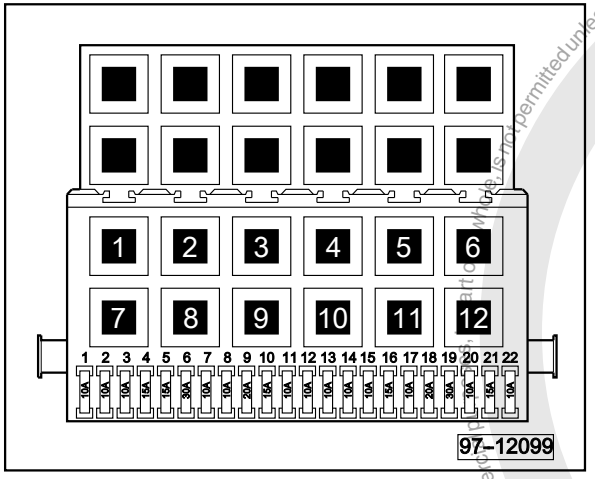
From August 1995

1.0 ltr./37 kW Motronic, engine code AER

From July 1996

1.6 ltr. - 1AV /55 kW, engine code AEE, from August 1995

For alternatives to relay and fuse positions as well as multi-pin connector wiring - see "Fitting locations" section.



12 - Fuel pump relay (167)

Notes!

- *The number in brackets behind the part designation 9*
- *denotes the control number on the housing.*

Fuse colours

30 A - green
25 A - white
20 A - yellow
15 A - blue
10 A - red
7.5 A - brown

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5 A - beige
3 A - lilac

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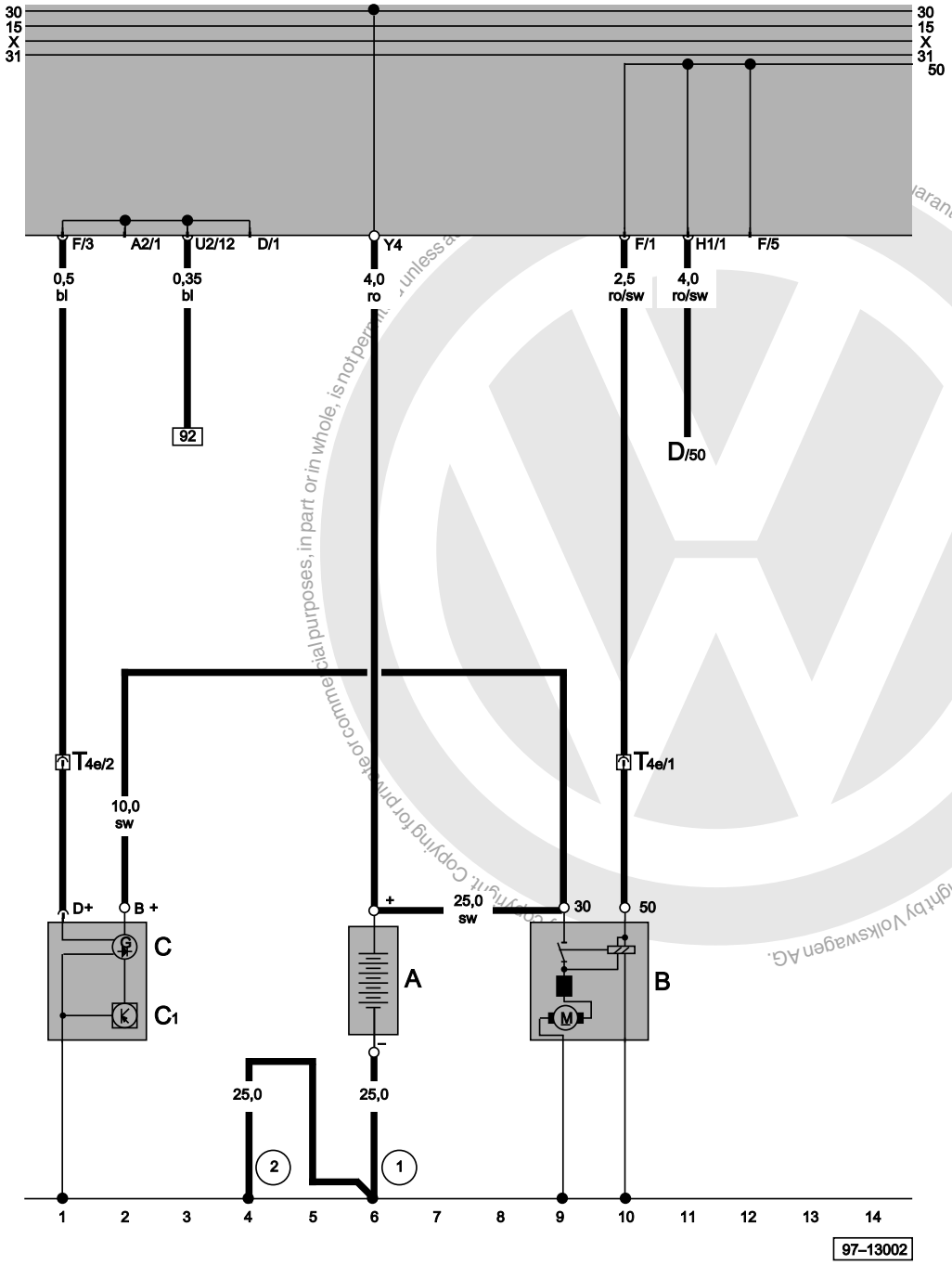

Battery, starter, alternator

A	Battery
B	Starter
C	Alternator
C1	Voltage regulator
D	Ignition/starter switch
T4e	4-pin connector, on gearbox
1	Earth strap, battery body
2	Earth strap, gearbox - body

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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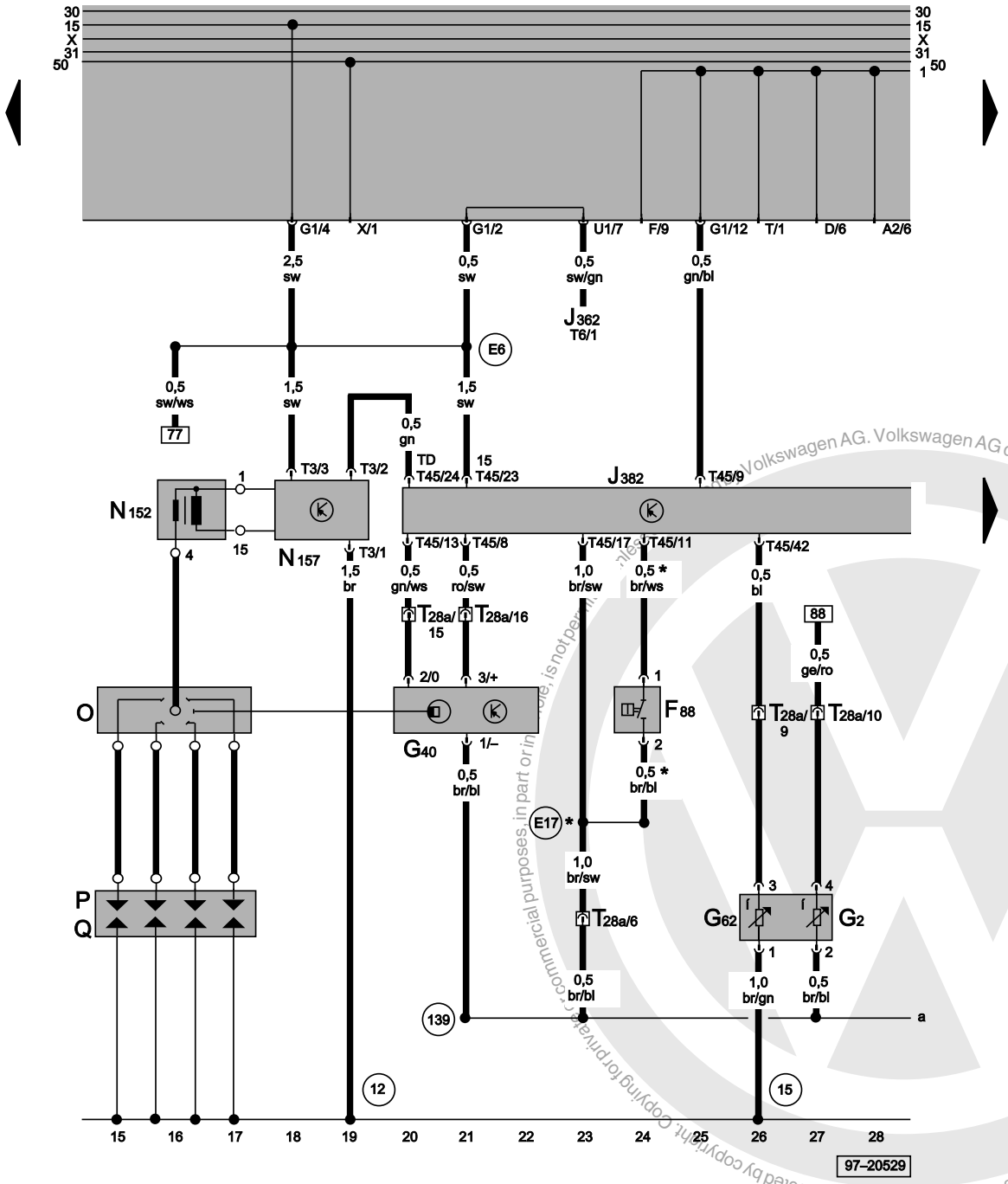

1AV control unit (injection system), ignition system, Hall sender, coolant temperature sender

F88	Power assisted steering pressure switch
G2	Coolant temperature sender
G40	Hall sender
G62	Coolant temperature sender
J362	Immobilizer control unit, next to steering column
J382	1AV control unit (injection system), right in plenum chamber
N152	Ignition transformer
N157	Ignition transformer output stage
O	Ignition distributor
P	Spark plug connector
Q	Flame plug
T3	3-pin connector, on ignition transformer output stage
T6	6-pin connector, on immobilizer control unit
T28a	28-pin connector, on engine
T45	45-pin connector, on 1AV control unit, (injection system)
12	Earth point, in engine compartment, left
15	Earth point, on cylinder head
139	Earth connection (sender earth), in Motronic wiring harness
E6	Positive connection -1- (15), in Motronic wiring harness
E17	Connection -2-, in Motronic wiring harness
*	For engine code AER only

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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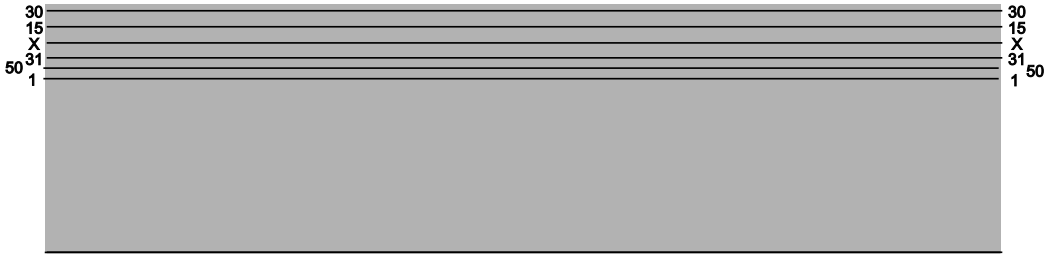

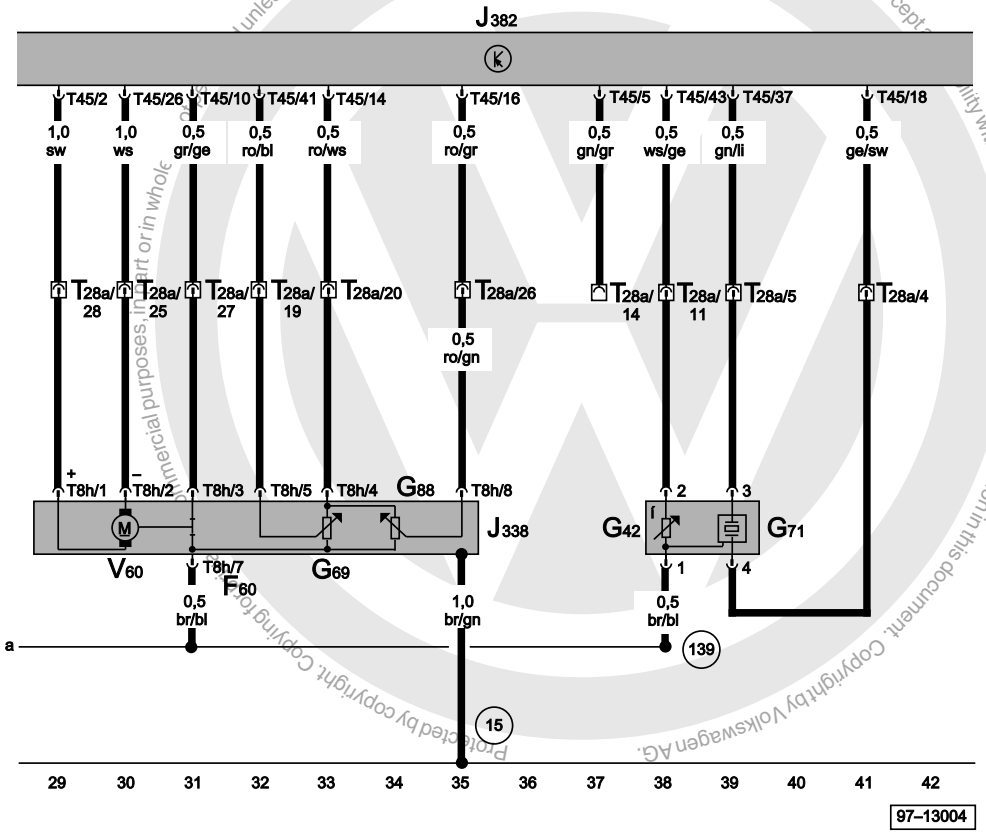

1AV control unit (injection system), throttle valve control part, intake air temperature sender, intake manifold pressure sender

F60	Idling switch
G42	Intake air temperature sender
G69	Throttle valve potentiometer
G71	Intake manifold pressure sender
G88	Throttle valve positioner potentiometer
J338	Throttle valve control unit
J382	1AV control unit (injection system), right in plenum chamber
T8h	8-pin connector, on throttle valve control unit
T28a	28-pin connector, on engine
T45	45-pin connector, on 1AV control unit, (injection system)
V60	Throttle valve positioner
15	Earth point, on cylinder head
139	Earth connection (sender earth), in Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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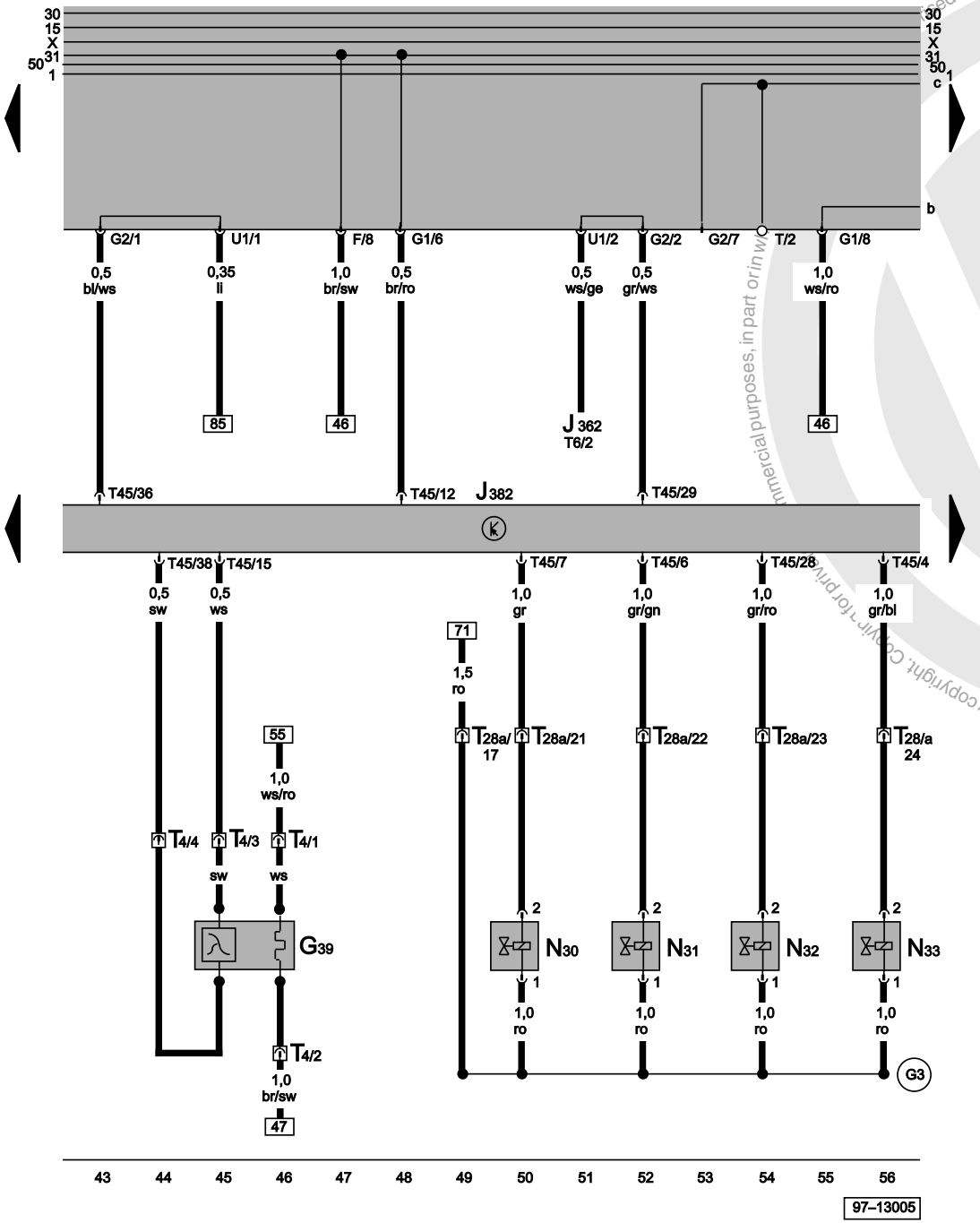

1AV control unit (injection system), injectors, Lambda probe

G39	Lambda probe
J362	Immobilizer control unit, next to steering column
J382	1AV control unit (injection system), right in plenum chamber
N30	Injector, cylinder 1
N31	Injector, cylinder 2
N32	Injector, cylinder 3
N33	Injector, cylinder 4
T4	4-pin connector, on gearbox
T6	6-pin connector, on immobilizer control unit
T28a	28-pin connector, on engine
T45	45-pin connector, on 1AV control unit, (injection system)
(G3)	Positive (+) connection in cable sleeve - injectors

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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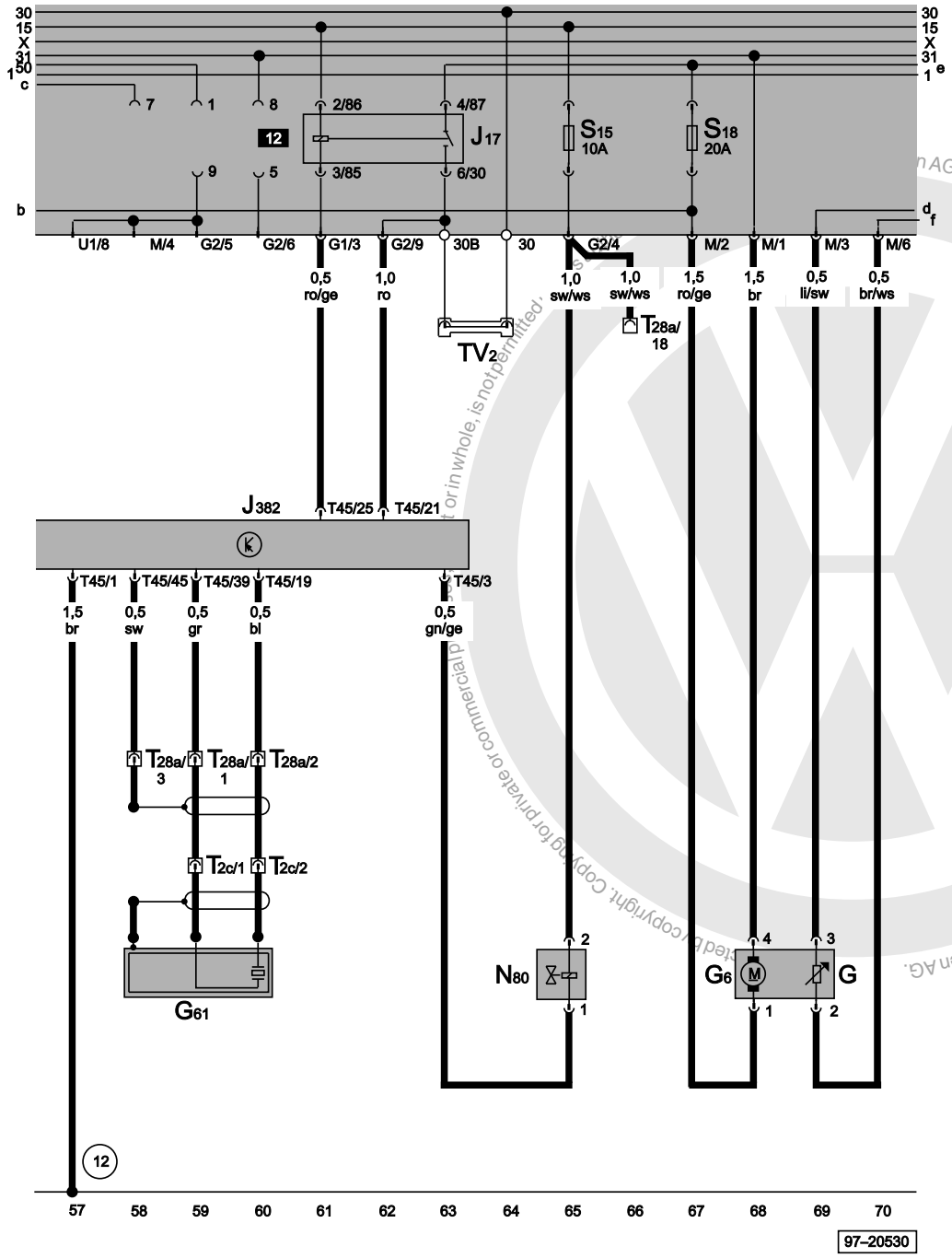

1AV control unit (injection system), knock sensor, activated charcoal filter system, fuel supply system

G	Fuel gauge sender
G6	Fuel pump (pre-supply pump)
G61	Knock sensor I
J17	Fuel pump relay (01259)
J382	1AV control unit (injection system), right in plenum chamber
N80	Activated charcoal filter system solenoid valve I
T2c	2-pin connector, on engine
T28a	28-pin connector, on engine
T45	45-pin connector, on 1AV control unit, (injection system)
TV2	Terminal 30 junction box, behind the relay plate
12	Earth point, in engine compartment, left

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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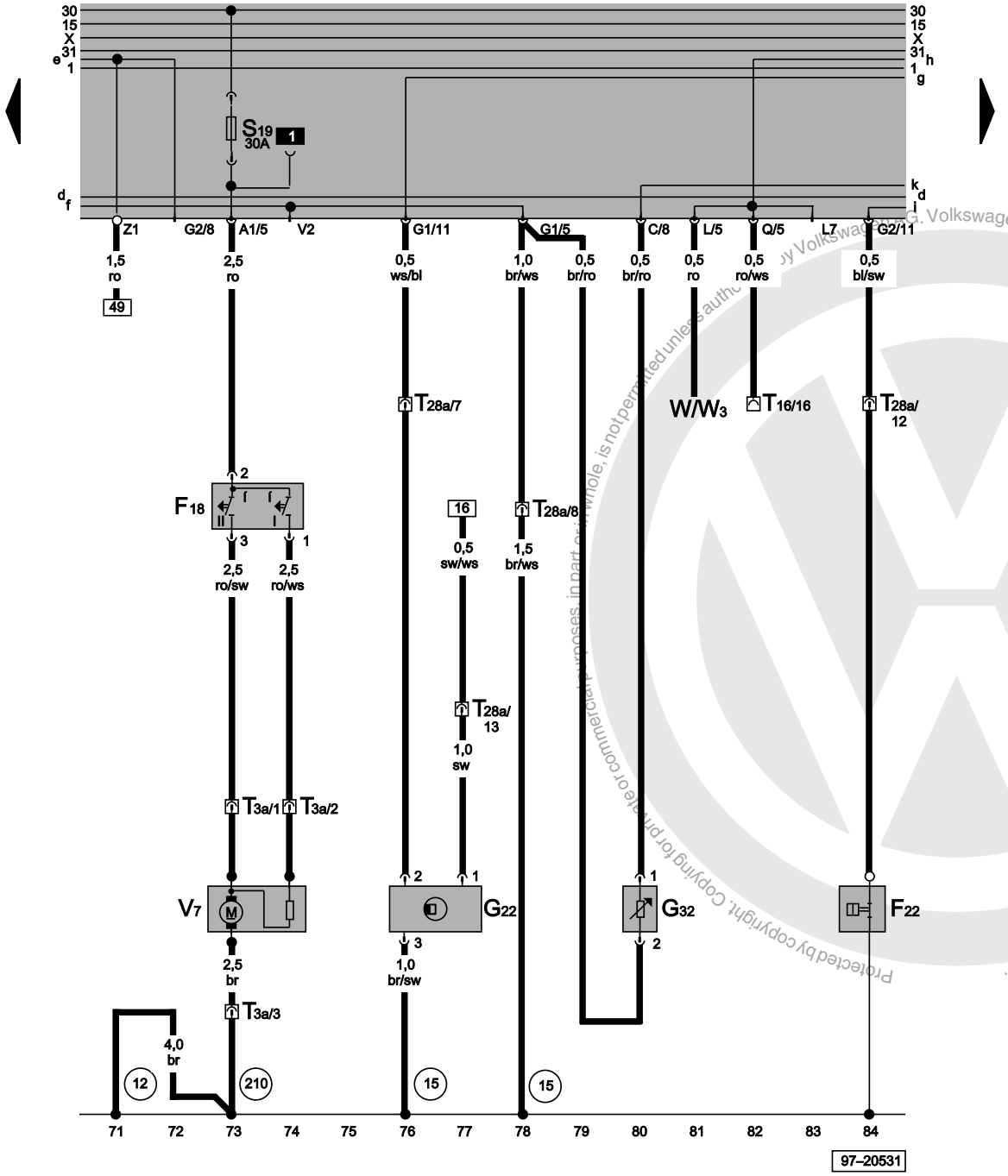

Radiator fan, speedometer sender, oil pressure switch

F18	Radiator fan thermo-switch
F22	Oil pressure switch (0.3 bar)
G22	Speedometer sender (Hall sender on gearbox)
G32	Coolant shortage indicator sender
T3a	3-pin connector, on radiator fan
T16	16-pin connector, behind shelf on driver's side, self-diagnosis socket for V.A.G 1551
T28a	28-pin connector, on engine
V7	Radiator fan
W	Interior light, front
W3	Luggage compartment light
12	Earth point, in engine compartment, left
15	Earth point, on cylinder head
210	Earth connection -1-, in Motronic wiring harness

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
rs	=	pink

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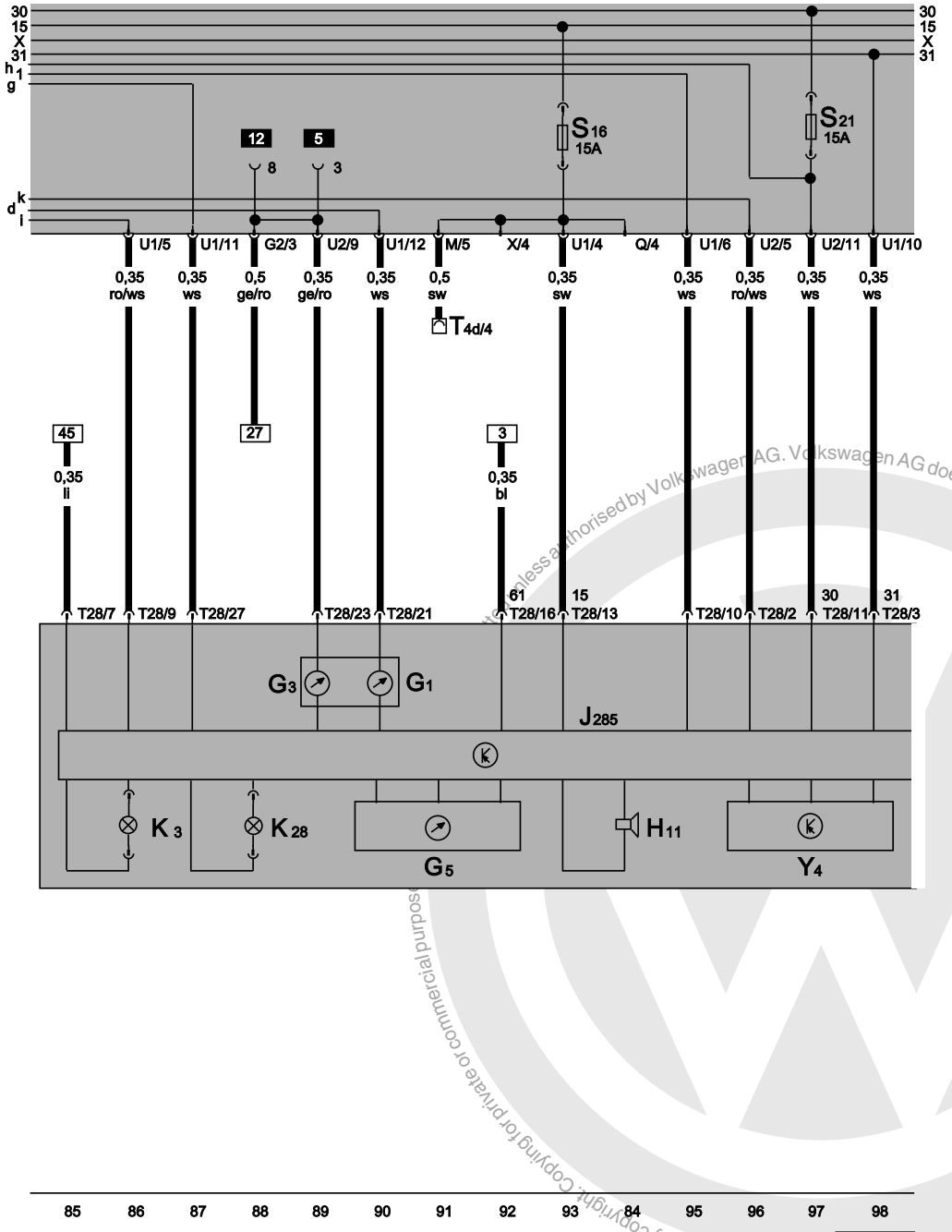

Dash panel insert, fuel gauge, coolant shortage and coolant temperature indicator, optical and acoustical oil pressure warning, odometer display

G1	Fuel gauge
G3	Coolant temperature gauge
G5	Rev. counter
H11	Oil pressure warning buzzer
J285	Control unit with display in dash panel insert
K3	Oil pressure warning lamp
K28	Coolant temperature/coolant shortage warning lamp
T4d	4-pin connector, behind relay plate
T28	28-pin connector, on dash panel insert
Y4	Odometer display

ws	=	white
sw	=	black
ro	=	red
br	=	brown
gn	=	green
bl	=	blue
gr	=	grey
li	=	purple
ge	=	yellow
or	=	orange
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Relay plate with fuse box and additional relay carrier

- Fuse locations 1/2
- Relay locations 1/3
- Additional relay carrier 1/4
- Multi-pin connector assignment 1/5

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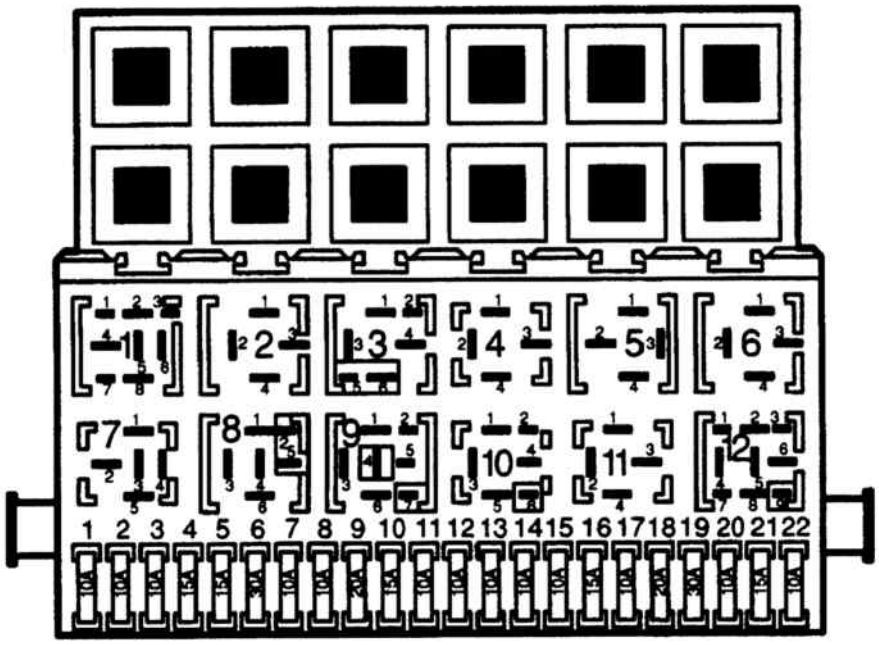
Fuse locations



Fuse locations for optional equipment not listed can be found in the relevant current flow diagrams.

1	–	Dipped beam left, headlight range control, left (56b)	10 A	12	–	Main beam, right (56a)	10 A
2	–	Dipped beam right, headlight range control, right (58)	10 A	13	–	Horn (15)	10 A
3	–	Number plate light (56b)	10 A	14	–	Reversing lights, additional equipment (15)	15 A
4	–	Rear window wiper (X)	15 A	15	–	Engine electrics	10 A
5	–	Windscreen wipe/wash system, heated washer jets	15 A	16	–	Dash panel insert (15)	15 A
6	–	Fresh air blower, air conditioner (X)	20 A	17	–	Turn signals (15)	10 A
7	–	Side light and tail light, right (58R)	10 A	18	–	Fuel pump, Lambda probe	20 A
8	–	Side and tail light, left (58L)	10 A	19	–	Radiator fan (30)	30 A
9	–	Heated rear window (X)	20 A	20	–	Brake light (30)	10 A
10	–	Rear fog light (X)	15 A	21	–	Interior lights, dash panel insert, self-diagnosis (30)	15 A
11	–	Main beam, left (56a)	10 A	22	–	Radio system, cigarette lighter (30)	10 A

Fuse colours

30 A – green
20 A – yellow
15 A – blue
10 A – red

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Relay locations

Notes:

- *For deviations concerning relay plate locations see relevant current flow diagrams.*
- *The number in brackets behind the component designation refers to the production control number on the housing.*

Relay locations on relay plate:

1 – Air conditioner relay (147)

2 – Rear window wipe/wash relay (72)

3 – vacant

4 – Relief relay for X contact (18)

5 – vacant

6 – Hazard warning light relay (21)

7 – Headlight washer system relay (33)

8 – Intermittent wipe/wash relay (19)

9 – Light switched on, warning buzzer (36)

10 – Bridge for fog light

11 – Bridge for horn

12 – Fuel pump relay (167),
Glow plug relay (104)

Relay locations above relay plate:

- Window lifter relay and/or folding sliding roof (53)
- Junction box for terminal 58b
- Junction box for terminal 15a
- Starter inhibitor relay (53)
- Intake manifold preheating relay (1)
- Glow period control unit
- Control unit fuse 1 – ABS (hydraulic pump) 30A
- Control unit fuse 2 – ABS (valves) 30A
- Window lifter thermo fuse and/or folding sliding roof
- Glow plug fuse 50A

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Additional relay carrier

Additional relay carrier under driver's seat:

- Control unit for heated driver's seat (59)

Additional relay carrier under passenger's seat:

- Control unit for heated passenger's seat (59)

Additional relay carrier in engine compartment, left:

- Radiator fan control unit

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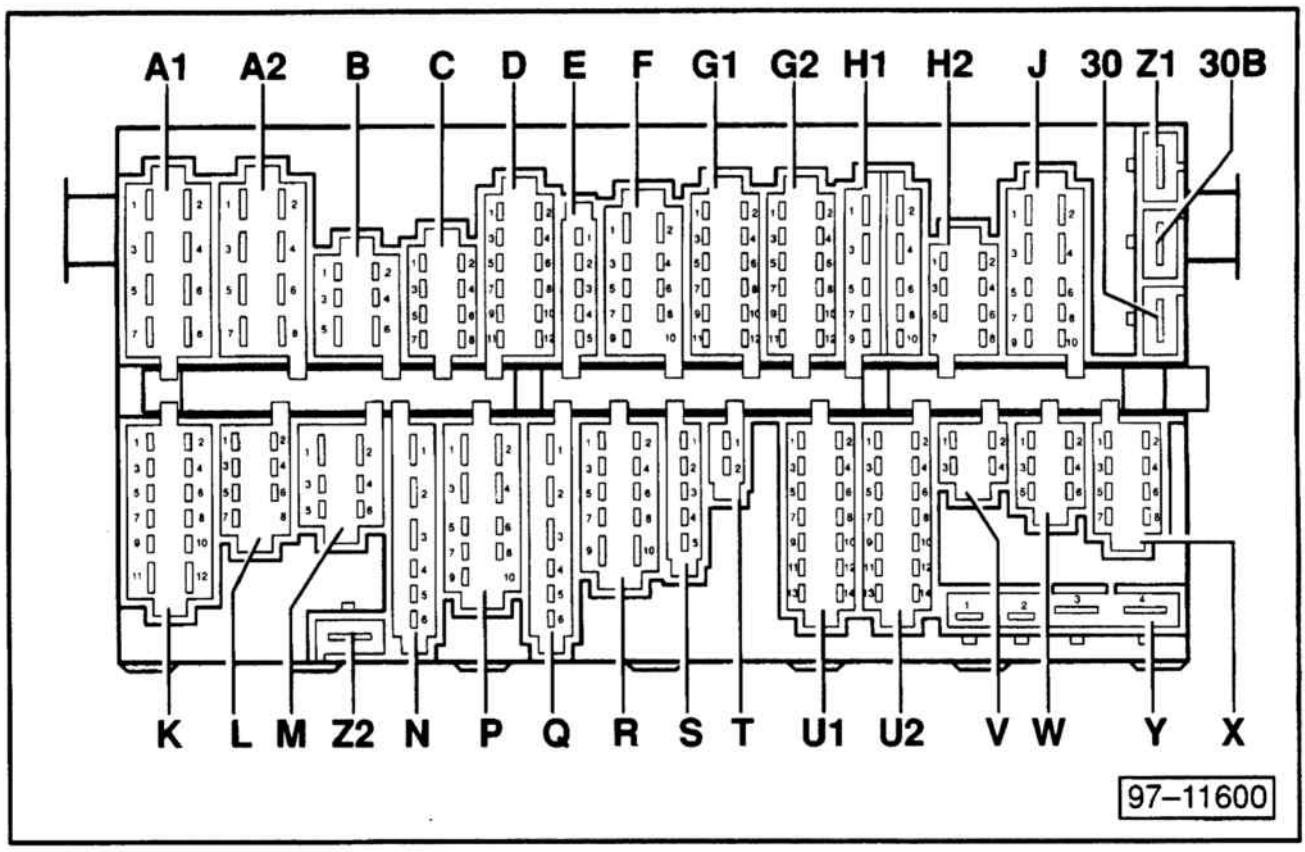
Multi-pin connector locations:



A1 – Connector (yellow), 8 pin, engine compartment wiring loom

A2 – Connector (yellow) 8 pin, engine compartment wiring loom

B – Connector (green) 6 pin, headlight washer system

C – Connector (yellow) 8 pin, engine compartment wiring loom

D – Connector (green) 12 pin, for optional equipment

E – Connector (green) 5 pin, engine compartment wiring loom

F – Connector (white) 10 pin, engine compartment wiring loom

G1 – Connector (white) 12 pin, engine compartment wiring loom

G2 – Connector (white) 12 pin, engine compartment wiring loom

H1 – Connector (red) 10 pin, steering column switch wiring loom

H2 – Connector (red) 8 pin, steering column switch wiring loom

J – Connector (red) 10 pin, steering column switch wiring loom

K – Connector (black) 12 pin, interior wiring loom

L – Connector (black) 8 pin, interior wiring loom

M – Connector (black) 6 pin, interior wiring loom

N – Connector (green) 6 pin

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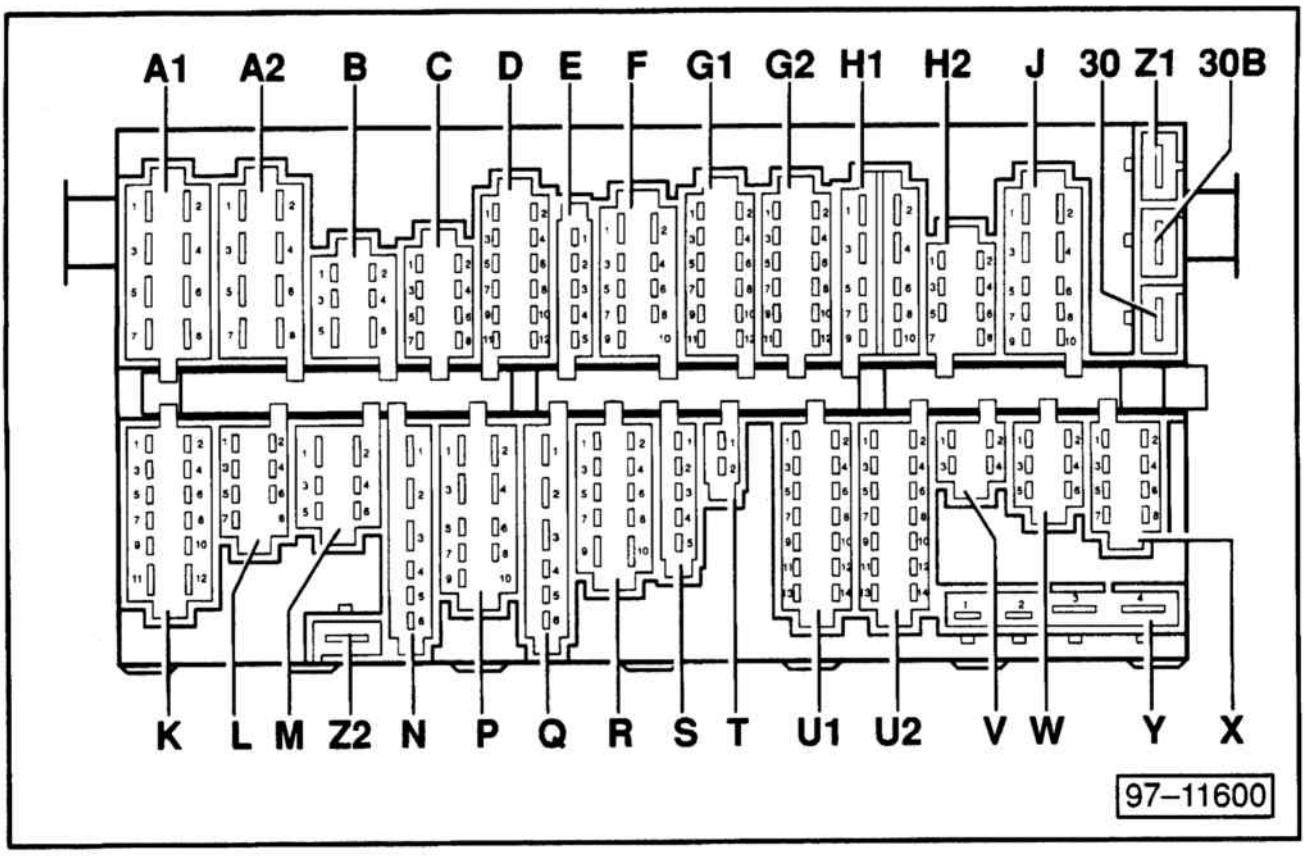

P – Connector (blue) 10 pin, dash panel insert wiring loom

Q – Connector (blue) 6 pin, dash panel insert wiring loom

R – Connector (blue) 10 pin, dash panel insert wiring loom

S – Connector (white) 5 pin, engine compartment wiring loom

T – Connector (green) 2 pin, interior wiring loom

U1 – Connector (blue) 14 pin, dash panel insert wiring loom

U2 – Connector (blue) 14 pin, dash panel insert wiring loom

V – Connector (green) 4 pin

W – Connector (green) 6 pin, for optional equipment

X – Connector (green) 8 pin, dash panel insert wiring loom

Y – Connector single, terminal 30

Z1 – Connector single

Z2 – Connector single, terminal 31, battery earth

30 – Connector single, terminal 30

30B – Connector single

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Multi-pin connectors

On engine:

- Multi-pin connector, 28 pin 2/2
- Multi-pin connector, 19 pin 2/2
- Multi-pin connector, 17 pin 2/3

On body:

- Multi-pin connector, 19 pin 2/4
- Multi-pin connector, 18 pin 2/4

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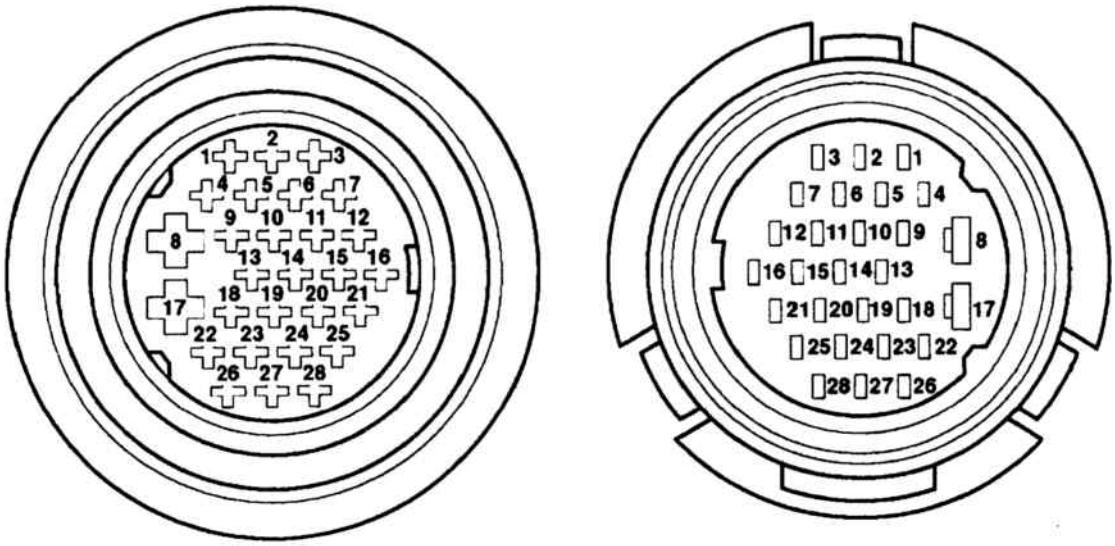
Multi-pin connector, 28 pin

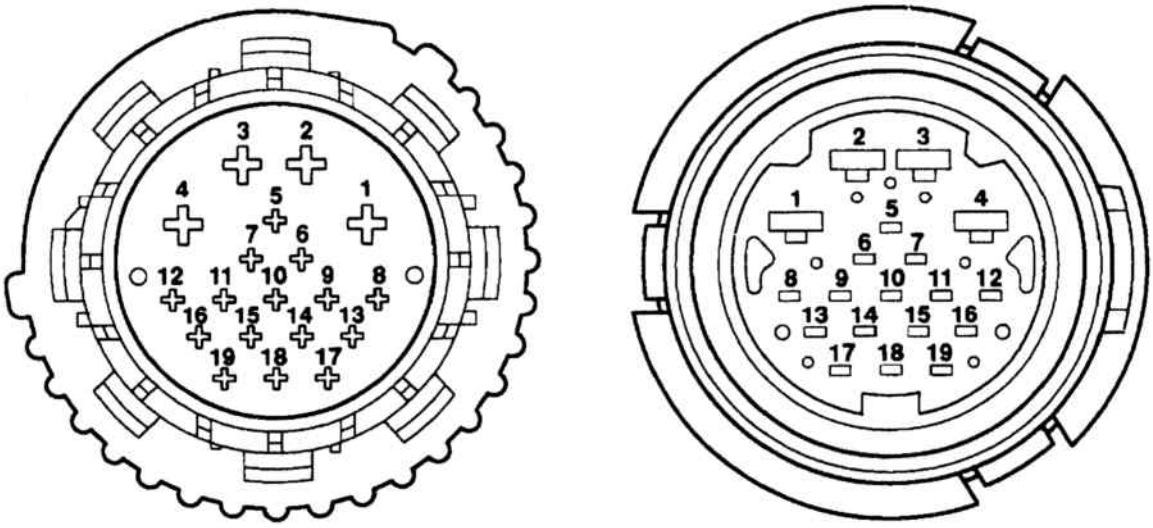
- All 4-Cyl. petrol engines



Wiring loom Engine V97–10219

Multi-pin connector, 19 pin

- 1.9 ltr. Cat. Diesel engine/47 kW, engine code AEF, from November 1995



Wiring loom Engine N97–0038

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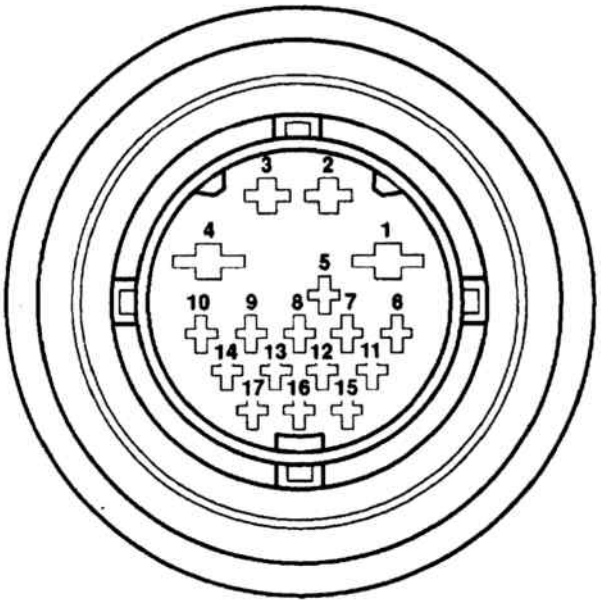
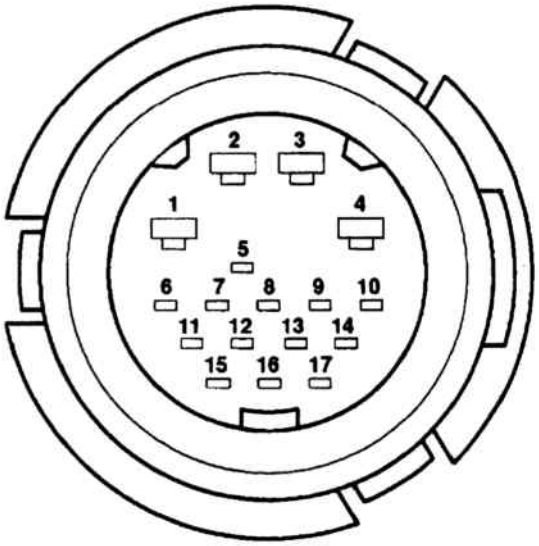
Multi-pin connector, 17 pin

- 1.9 ltr. Cat. Diesel engine/47 kW, engine code AEF, from November 1994 to October 1995



Wiring loom



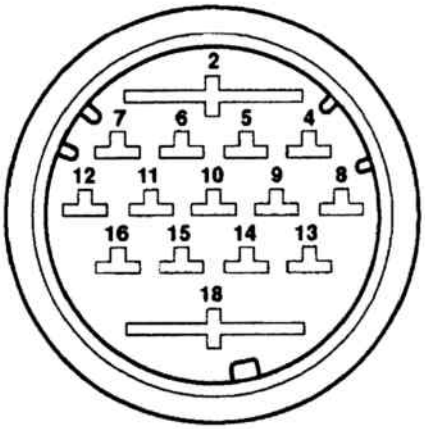
Engine

97-12515

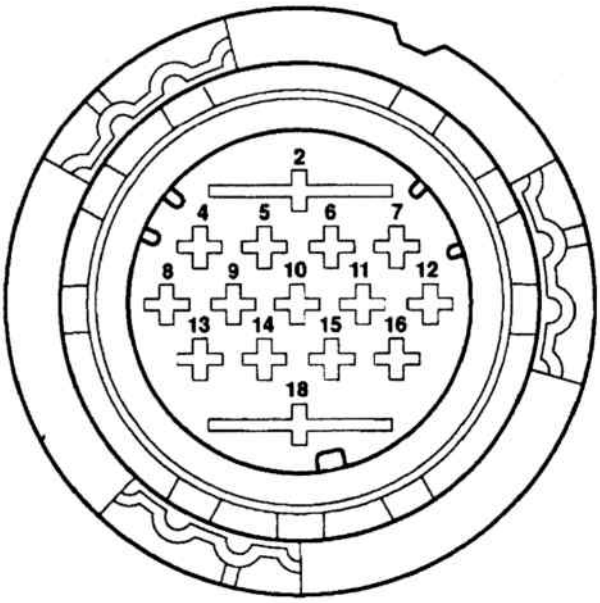
satelettronica

Multi-pin connector, 19 pin

- Front lighting



Front end

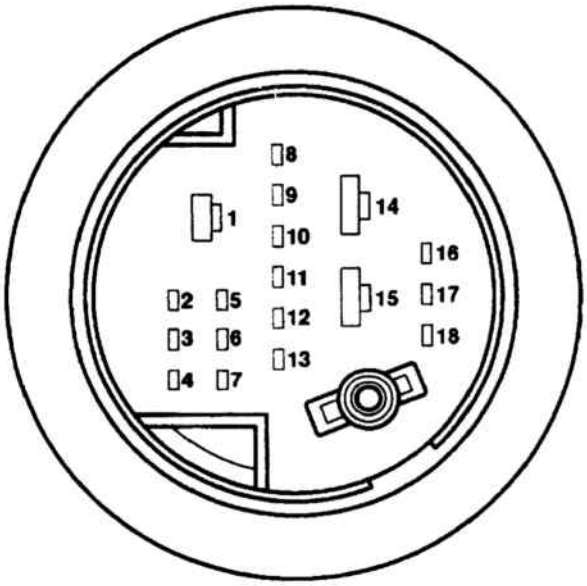


Wiring loom

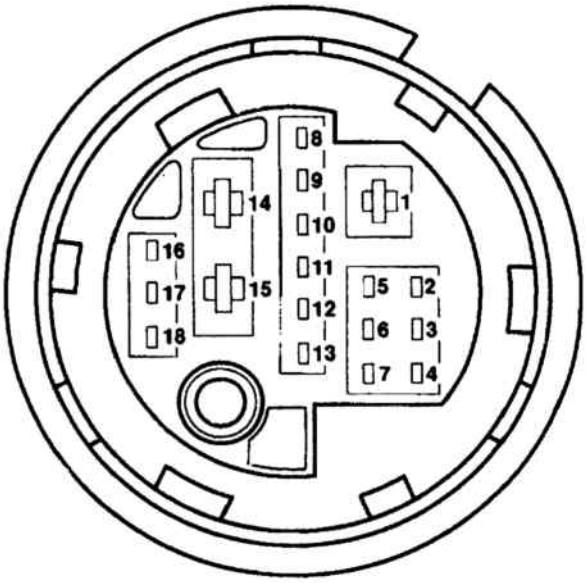
V97–10220

Multi-pin connector, 18 pin

- A pillar left and A pillar right



Driver/passenger door



A pillar

N97–0004

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Battery discharges

(Leakage current suspected)

Test prerequisites:

- Battery checked and OK.!

Possible fault causes:

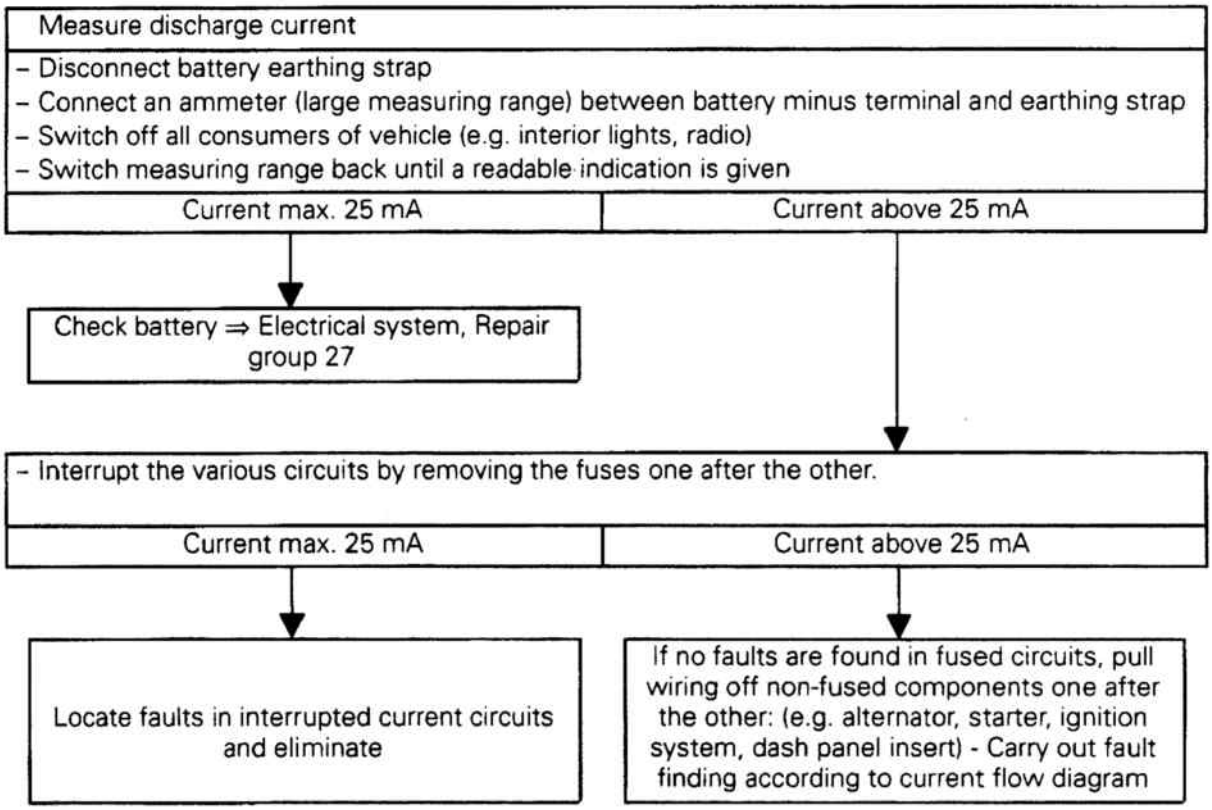
- *Corroded and dirty contacts*
- *Wires with chafed through insulation*
- *Internal short circuits in components*

For fault finding the following equipment is required:

- *Hand multimeter V.A.G 1526 A, Digital multimeter V.A.G 1715 or Digital multimeter V.A.G 1315 A*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*

Note:

In diesel engined vehicles with a door contact controlled glow plug system, the glow plug system can be switched on by opening and closing the driver's door. During the glow period a high discharge current flows from the battery. Therefore remove glow plug fuse (S39, 50A - see C.F.D.) so that the test unit is not damaged during fault finding by unintentionally switching glow plugs on. Before connecting test unit switch to highest current scale.



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Starter does not turn

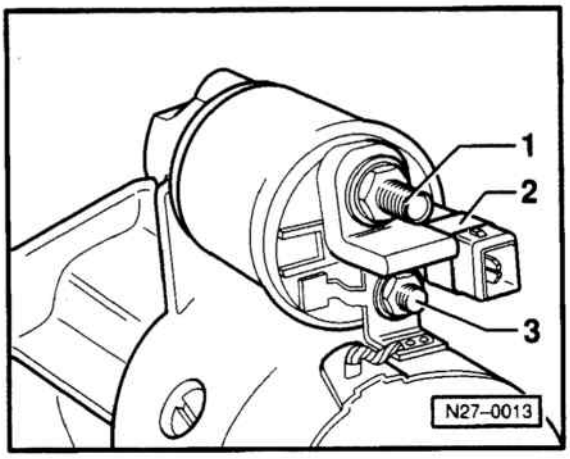
Test prerequisites:

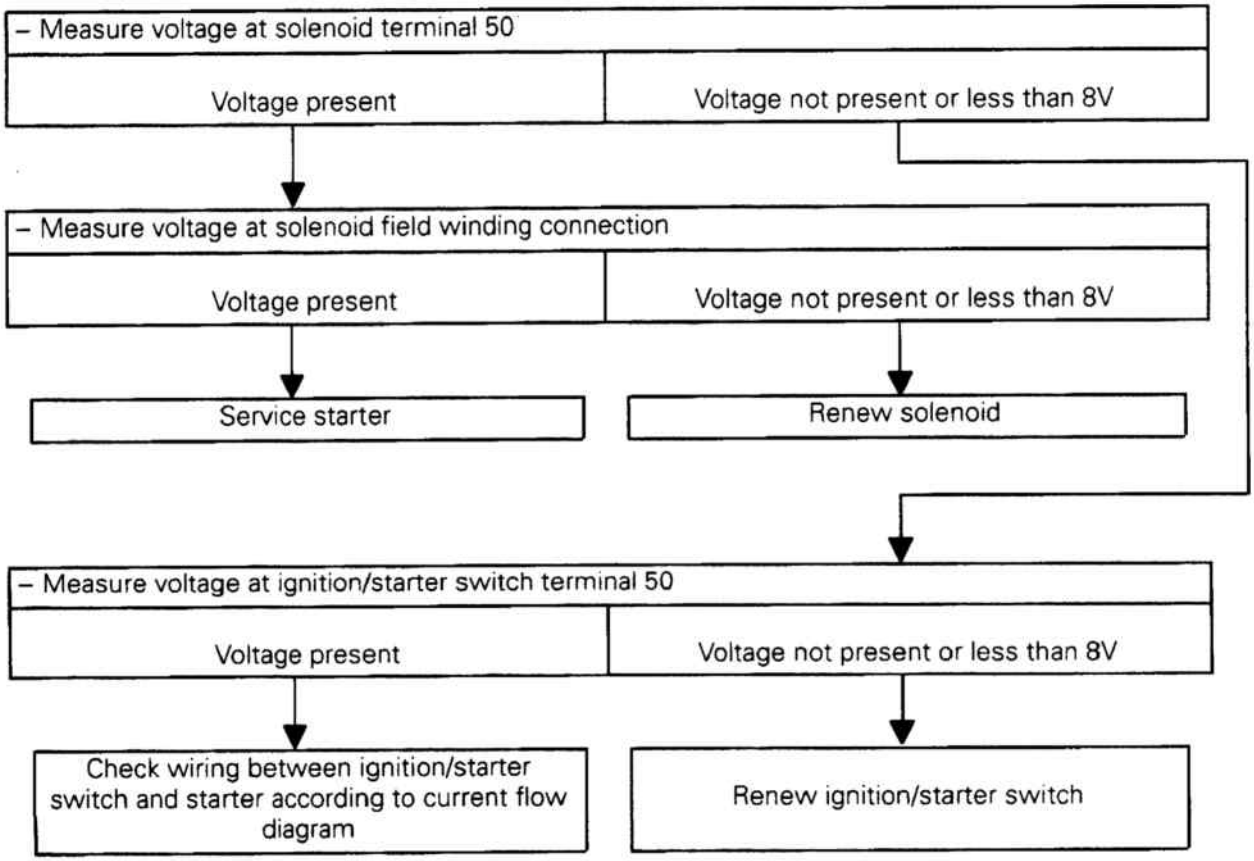
- Battery charged.
- Wiring connections on the solenoid and earth straps between engine, body and battery must be securely fitted and must not be oxidized.

For fault finding the following equipment is required:

- *Hand multimeter V.A.G 1526 A, Digital multimeter V.A.G 1715 or Digital multimeter V.A.G 1315 A*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*

1 - Terminal 30, from battery
2 - Terminal 50, from ignition/starter switch
3 - Field winding connection





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Starter turns too slowly to start engine

Test prerequisites:

- V belt tension OK.!

Battery inadequately charged or excessive voltage loss due to loose or oxidized connections	
– Check battery and if necessary charge ⇒ Electrical system; Repair group 27	
Starter cranks engine	Starter does not crank engine

End

Excessive voltage loss due to loose or oxidized connections on starter terminal 30	
– Disconnect battery earth strap from battery – Clean and tighten starter connections and earth strap between gearbox and body (do not loosen earth strap on body) – Connect battery earth strap	
Starter cranks engine	Starter does not crank engine

End

Following fault causes are possible: inadequate contact between carbon brushes and collector or collector scored or burnt and dirty

satelettronica

Checking headlight range control

Note:

The following fault finding programme can be used for both headlights!

Test prerequisites:

- Battery voltage OK.!
- Dipped beams OK.!
- Compact connector 19 pin near radiator left, properly connected!

Checking wiring (terminal 31) to the range control motors

- Switch ignition off
- Pull off 7 pin connector behind headlight
- Set measuring range switch of hand multimeter to ⊣◀ /♪
- Connect red probe to battery minus terminal
- Connect black probe to 7 pin connector, chamber 5

Signal does not sound	Signal sounds
Check wiring (terminal 31) according to current flow diagram	

Checking wiring (terminal 56b) to the range control motors

- Set measuring range switch of hand multimeter to 20 V =
- Connect red probe to 7 pin connector, chamber 7
- Switch ignition on
- Switch dipped beams on

Voltage not present	Voltage present
Check wiring (terminal 56b) according to current flow diagram	

Check regulation voltage for range control motors

- Connect red probe to 7 pin connector, chamber 6
- Operate adjuster for headlight range control (E102)

Voltage changes	Voltage does not change
Wiring and range adjuster (E102) OK. – Renew headlight insert with range control motor	A

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A

Check voltage supply (terminal 56b) at range control adjuster (E102)

- Switch ignition and lights off
- Remove lighting switch (E1) with range control adjuster (E102 ⇒ Workshop Manual, Electrical system, Repair group 96
- Connect black probe to range control adjuster (E102), chamber 3
- Connect red probe to range control adjuster (E102), chamber 1
- Switch ignition on
- Switch dipped beams on

Voltage not present	Voltage present

Voltage not present → Check wiring (terminal 56b) to range control adjuster according to current flow diagram

Voltage present →

Check regulating voltage for motors at range control adjuster (E102)

- Connect red probe to range control adjuster (E102), chamber 2
- Operate range control adjuster (E102)

Voltage does not change	Voltage changes

Voltage does not change → Renew lighting switch (E1) with range control adjuster (E102)

Voltage changes → Range control adjuster (E102) OK. – Check wiring from range control adjuster (E102) to the motors

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Alternator warning lamp does not go out as speed increases

Test prerequisites:

- Fuses S16 and S22 OK.!

Check wire between alternator (D+) and warning lamp

- Disconnect wire D+ from alternator
- Switch ignition on

Warning lamp does not light up	Warning lamp lights up
Alternator or voltage regulator defective ⇒ Fault finding programme No. 7	

- Switch ignition off
- Pull multi-pin connector -F- off relay plate
- Switch ignition on

Warning lamp does not light up	Warning lamp lights up
Wire -D+- between alternator and relay plate shorting to earth. Check wiring according to current flow diagram	

- Switch ignition off
- Separate multi-pin connector -U2- wire -12- at relay plate
- Switch ignition on

Warning lamp does not light up	Warning lamp lights up
Relay plate has short to earth	Wire from U2/12 to dash panel insert or dash panel insert defective

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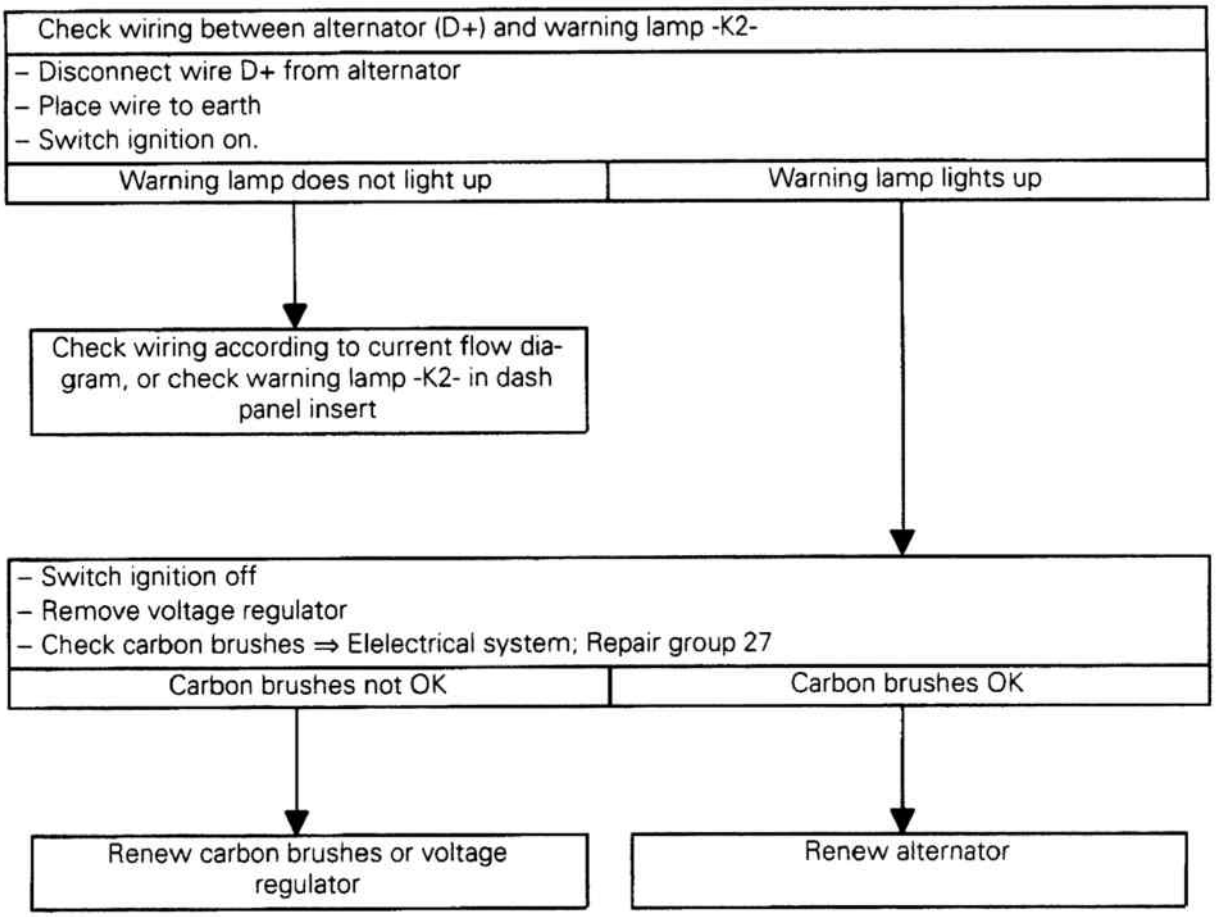
Alternator warning lamp does not light up with ignition switched on

Test prerequisites:

- V belt tension and battery OK.!
- Alternator wiring and earth strap between engine, body and battery must be secure and not oxidized.



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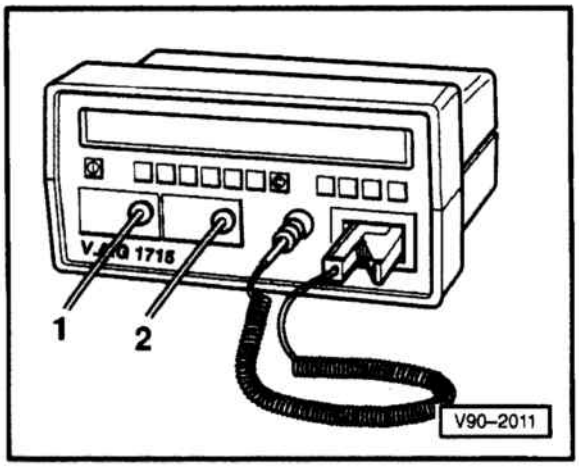
Checking alternator and voltage regulator with multimeter V.A.G 1715

Note:

Before starting test, check ribbed vee belt tension, alternator for security, wiring and battery earth strap.



Checking alternator with multimeter V.A.G 1715:

- Switch multimeter on
- Press generator test button (G)

On multimeter display appears:

"Connect cables"

- Black test wire (–) to battery earth strap
- Red test wire (+) to blue wire -D+- on alternator (use adapter set V.A.G 1594 A)
- Start engine
- Switch on electrical consumers in vehicle (main beam, rear window etc.)
- Run engine at 1500 to 2000 rpm for a few seconds

Test result:

If alternator operates correctly, "OK" is indicated on the display

If alternator is defective, "Not OK" is indicated on the display and the alternator must be serviced.

satelettronica

Checking coolant temperature gauge

Notes:

- *If the fuel gauge is also defective, the dash panel insert must be renewed.*
- *If the coolant temperature sender (G2) wiring has a short or open circuit, the gauge needle will remain on the left stop of the scale. On some dash panel inserts this fault remains stored; for further fault finding the ignition must be switched off and on again.*
- *The coolant temperature gauge has a plateau function which means that between a temperature range of +75° to +107° C the gauge needle will remain at +90° C.*

Equipment required:

- Instrument tester VW 1301
- Adapter set V.A.G 1594 A
- Test box V.A.G 1598 with adapter V.A.G 1598/8
- Hand multimeter V.A.G 1526
- Valid current flow diagram

Test prerequisites:

- Fuses S16 and S21 OK.!

Checking coolant temperature gauge (G3)

- Pull connector off coolant temperature gauge (G2)
- Connect instrument tester VW 1301 with adapter set V.A.G 1594 A to 4 pin connector, chamber 4 (0.5 yellow/red wire) and chamber 2 (0.5 brown/green wire)
- Switch ignition on
- Set VW 1301 potentiometer values (setting values ⇒ next page)

Needle deflection does not correspond to specification	No needle deflection
↓ Temperature gauge (G3) defective, renew dash panel insert	↓

Check wiring from coolant temperature gauge sender (G2) to dash panel insert

- Switch ignition off
- Pull 28 pin connector off dash panel insert
- Connect 28 pin connector of dash panel wiring loom with adapter V.A.G 1598/8 to test box V.A.G 1598 (do not connect dash panel insert to test box, adapter connection remains free!)
- Set measuring range switch of hand multimeter V.A.G. 1526 to ⊣⊢ / ♪
- Connect black probe to test box, socket 23
- Connect red probe to 4 pin connector, chamber 4 (0.5 yellow/red wire)

Signal does not sound	Signal sounds
↓ Repair wiring	↓ A

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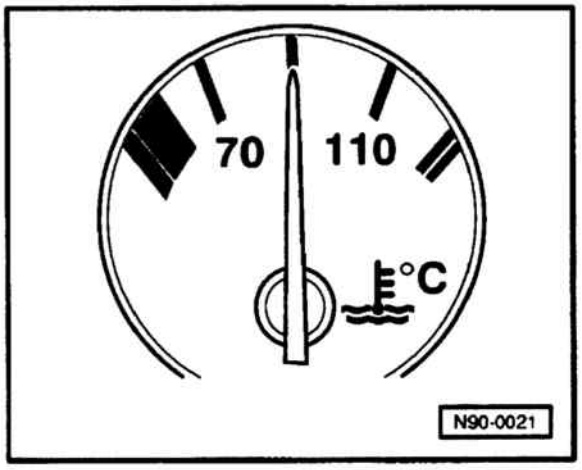
A

Check earth wiring from coolant temperature sender (G2) to earth	
– Set measuring range switch of hand multimeter V.A.G 1526 to ⊣◀ / ♪ – Connect red probe to 4 pin connector, chamber 2 (0.5 bown/green wire) – Connect black probe to engine earth, on engine block	
Signal does not sound	Signal sounds
Repair earth wire	Renew dash panel insert

Table of values for test programme:

Notes:

- *The coolant temperature gauge in dash panel insert must be checked with different setting values depending upon the manufacturer*
- *The manufacturer's instructions are located on the back of dash panel insert*



Setting values on instrument testers:

Needle position / Manufacturer	70 degrees	90 degrees (plateau function)	110 degrees
VDO	512	app.132 to app. 342	96
Motometer	498	app.136 to app. 334	98

If the specifications are not attained, the coolant temperature gauge sender (G2) is defective.
Permissible deviation: One needle width!

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Checking fuel gauge

Contents:

- Checking fuel gauge 9/2
- Checking fuel gauge sender 9/3

For fault finding the following equipment is required:

- *Instrument tester VW 1301*
- *Hand multimeter V.A.G 1526 or V.A.G 1526 A*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*
- *Workshop Manual Engine, Repair group 20*
- *Fuel extraction unit V.A.G 1433 A*

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Checking fuel gauge

Notes:

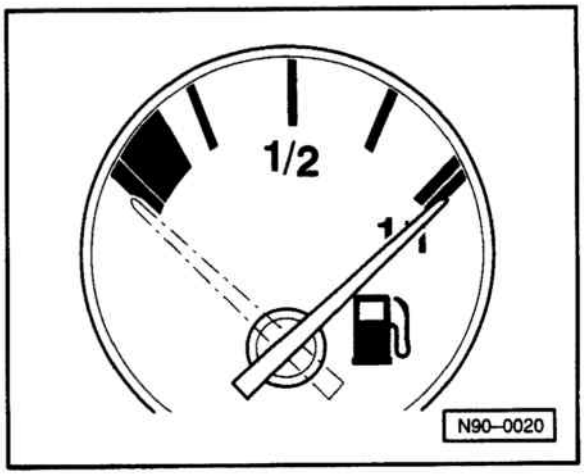
- *If the coolant temperature gauge is also defective, renew dash panel insert.*
- *If the fuel gauge sender (G) wiring has a short or an open circuit, the gauge needle will remain on the left stop of the scale.*
- *The fuel gauge needle will only move when more than 4 litres of fuel are poured in. Smaller quantities do not effect the gauge!*
- *When filling the tank the ignition must be switched off, otherwise after filling the tank the tank contents will not be correctly displayed for a long time.*
- *If the the tank is filled completely with the ignition switched on, and the scale line for "full" is not reached after waiting a long time, the fuel gauge display can be corrected by calling up the test mode.*

Test prerequisites:

- Fuses S16 and S21 OK.!

Table of values for test programme:

60	The fuel gauge needle points to the scale line for full = 1/1
160	The fuel gauge needle points to the scale line for half full = 1/2
302	The fuel gauge needle points to the area of scale field for reserve
546	The fuel gauge needle points to the area of scale field for empty



Permissible deviation: One needle width!

If specifications are attained, the fuel gauge sender -G- must be checked ⇒ Page 9/3

Test programme:

Checking fuel gauge -G1-	
– Pull 4 pin connector off fuel gauge sender (G) – Connect instrument tester VW 1301 with adapter set V.A.G 1594 A to 4 pin connector, chamber 3 (0.5 lilac/black wire) and chamber 2 (0.5 brown wire) – Call up dash panel insert test mode: (In the test mode the instrument needle position can be changed without a time delay with VW 1301) – Switch ignition on – Press trip recorder knob – Keep trip recorder knob depressed and switch ignition off and then on again – Set VW 1301 potentiometer values (see table above)	
Needle deflection does not correspond to specification	No needle deflection
↓	↓
Fuel gauge -G1- defective, renew dash panel insert	A

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A

Check wiring from sender to dash panel insert	
– Switch off ignition – Pull 28 pin connector off dash panel insert – Connect test box V.A.G 1598 to dash panel wiring loom 28 pin connector using adapter V.A.G 1598/8 (do not connect dash panel insert to test box, adapter connection remains vacant!) – Set hand multimeter V.A.G. 1526 measuring range switch to ⊣◀ / ♪ – Connect black probe to test box, socket 21 – Connect red probe to 4 pin connector, contact 3 (lilac/black wire)	
Signal does not sound	Signal sounds
Repair wiring	Renew dash panel insert

Checking fuel gauge sender

Test prerequisites:

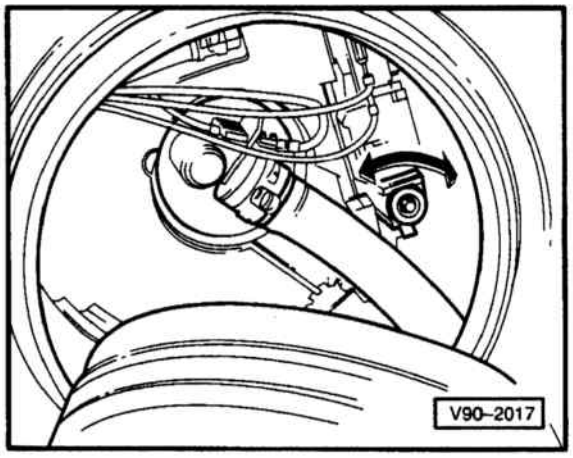
- Fuel gauge sender installation position OK.! ⇒ Workshop Manual, Mechanics, Repair group 20

Preparation for check:

- Switch ignition off.
- Pull connector off fuel gauge sender -G-.
- Connect resistance tester to fuel gauge sender contacts.
- Drain fuel tank completely. (V.A.G 1433A)

Fill fuel tank with 7 ltrs. of fuel and check resistance value:

Capacity	Specification
7 ltrs.	161 Ω ± 4 Ω



Continued on next page!

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Adjusting fuel gauge sender -G-	
– Unscrew fuel supply unit union nut on fuel tank and pull cover out of tank ⇒ Workshop Manual, Engine/Mechanics, Repair group 20 – Break off adjustment screw locking device by inserting allen key (6 mm AF key) – Adjust fuel gauge sender (G) to specification	
Specification attained	Specification cannot be adjusted

↓ **End**

– Check fuel tank for deformations	
Tank OK	Tank deformed

Renew sender	Renew fuel tank

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Checking radio system

Contents:

- Radio does not work 10/2
- FM (VHF) reception disturbed, poor, interrupted 10/2
- Checking roof aerial 10/3
- One or more loudspeakers do not work 10/4
- LED for anti-theft coding does not flash when switched off 10/5
- Cassette playback muffled or not clear 10/5
- Autoreverse switches over continuously or too early 10/6

The following equipment is required for fault finding:

- *Hand multimeter V.A.G 1526*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*
- *Spare aerial*
- *Instruction manual for radio concerned*

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Radio does not work

Test prerequisite:

- Fuse S22 OK.!

Check battery voltage

- Pull radio out of frame ⇒ Electrical system; Repair group 91
- Pull black 8 pin connector off radio (current supply)
- Set multimeter V.A.G 1526 range switch to 20 Volt =
- Connect black probe to chamber 8 in 8 pin connector
- Connect red probe to chamber 7 in 8 pin connector

No voltage	Voltage present
↓ Check wiring to radio according to current flow diagram	↓

Check fuse at rear of radio

- Pull fuse out of radio
- Set multimeter V.A.G 1526 range switch to ⊣◀ /♪
- Check fuse for continuity

Meter signal sounds	Meter signal does not sound
↓ Renew radio	↓ Renew fuse on radio

FM reception disturbed, poor or interrupted

Test prerequisite:

- FM button depressed
- Set tuned to station with a strong signal
- Roof aerial fitted
- Reception conditions OK (not in Workshop)

Check radio

- Pull radio out of frame ⇒ Electrical system; Repair group 91
- Connect spare aerial

Reception not OK	Reception OK
↓ Renew radio	↓ Check aerial ⇒ No. 10/3

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Checking roof aerial

Test prerequisites:

- The radio installed must correspond with new radio generation from Model year 1994

Check power supply for aerial amplifier

- Switch off radio
- Pull radio out of dash panel ⇒ see Workshop Manual, Electrical system; Repair group 91
- Pull aerial cable out of radio
- Set V.A.G 1301 potentiometer to scale value 490
- Connect V.A.G 1301 leads to centre wire and aerial socket earth on radio (use adapter set V.A.G 1594 A)
- Set hand multimeter V.A.G 1526 measuring range switch to 20 V DC
- Connect red probe to aerial socket centre wire
- Connect black probe to aerial socket earth
- Switch on radio

No voltage present	Voltage approx. battery voltage
↓ Renew radio	↓

Check aerial wire to roof for short circuit

- Switch off radio
- Remove left and right C pillar trim and lower moulded headlining in area of roof aerial ⇒ see Workshop Manual, Body repair; Repair group 70
- Pull aerial wire off roof aerial
- Set hand multimeter V.A.G 1526 measuring range switch to ⊣◀ / ♪
- Connect red probe to centre wire of aerial connector
- Connect black probe to aerial connector screening (earth) (use adapter set V.A.G 1594 A)

Signal sounds	Signal does not sound
↓ Short circuit between centre wire and screening - renew aerial wire	↓

Check aerial wire to roof for open circuit

- Connect aerial wire to radio
- Set hand multimeter V.A.G 1526 measuring range switch to 20 V DC
- Connect red probe to aerial centre wire, behind moulded headlining
- Connect black probe to aerial wire screening (earth) (use adapter set V.A.G 1594 A)

No voltage present	Voltage approx. battery voltage
↓ Break in aerial wire - check single connector, on A pillar lower left or renew wire	↓ Renew roof aerial

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One or more loudspeakers do not work

Test prerequisites:

- Loudspeaker connectors correctly connected to radio

Check loudspeakers

- Pull radio out of frame ⇒ Electrical system; Repair group 91
- Pull brown 8 pin connector (loudspeaker) off radio
- Set hand multimeter V.A.G 1526 measuring range switch to 200 Ω
- Probe connection ⇒ see table below

Reading > 4 Ω → **Check loudspeaker for open circuit**

- Pull connector off loudspeaker ⇒ Electrical system; Repair group 91
- Connect probes to loudspeaker connections

Reading 2.5 ... 3 Ω → Check wiring to loudspeaker for open circuit according to current flow diagram

Reading > 3 Ω → Renew loudspeaker

Reading < 4 Ω → **Check loudspeaker for short circuit**

- Pull connector off loudspeaker ⇒ Electrical system; Repair group 91
- Connect probes to loudspeaker connections

Reading 2.5 ... 3 Ω → Check wiring to loudspeaker for short circuit according to current flow diagram

Reading < 2.5 Ω → Renew loudspeaker

Connection to the brown 8 pin connector (loudspeakers)

Test probe	Loudspeaker front left	Loudspeaker front right	Loudspeaker rear left	Loudspeaker rear right
red	chamber 5	chamber 3	chamber 7	chamber 1
black	chamber 6	chamber 4	chamber 8	chamber 2

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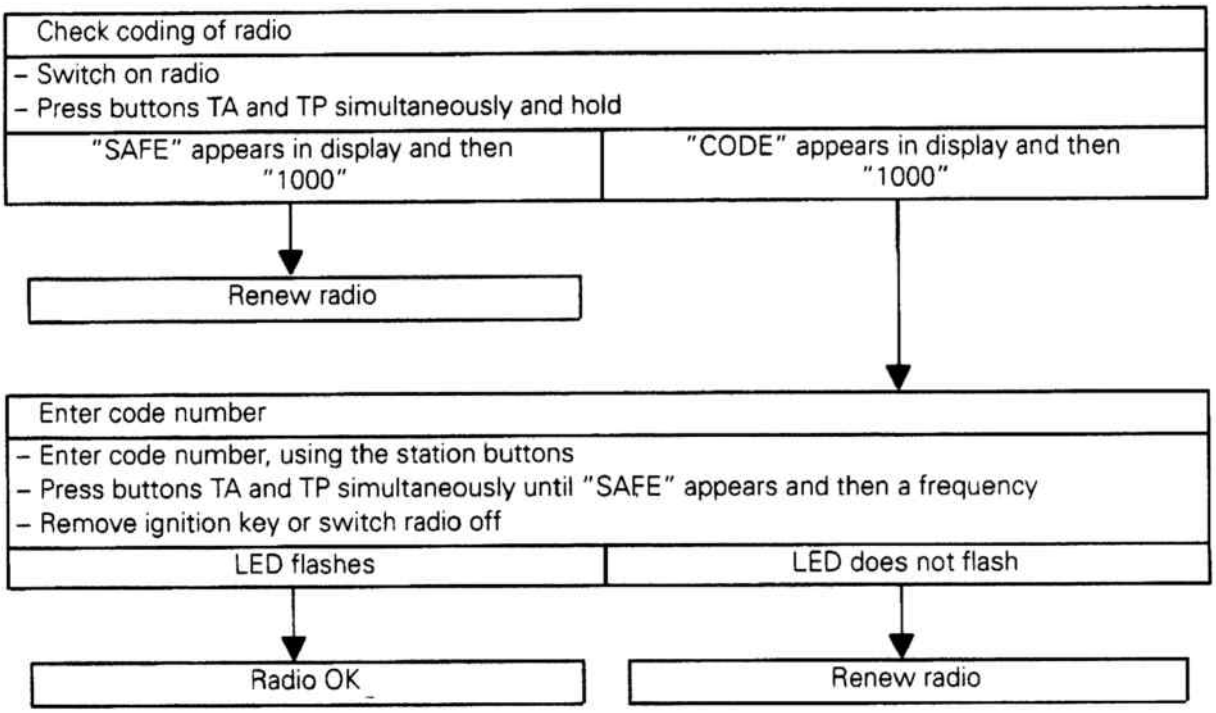
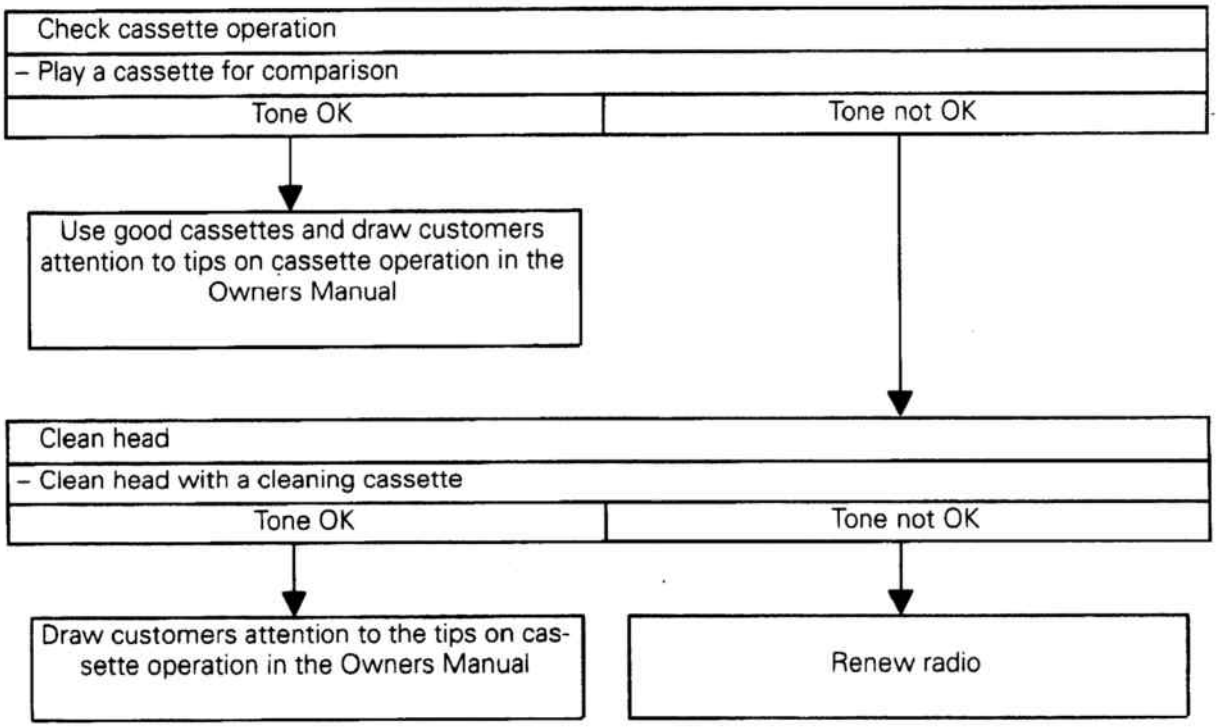
LED for anti-theft coding does not flash when switched off



Cassette playback muffled or not clear

Test prerequisites:

- Radio reception OK.!



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Autoreverse switches over continuously or too early

Check cassette operation	
– Use an easy-running and good cassette for comparison	
Still switches over incorrectly	Switches over correctly
↓	↓
Renew radio	Use good cassette and draw customers attention to the tips on cassette operation in the Owners Manual

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Checking dash panel insert

Contents:

- Calling up dash panel insert test mode 11/2
- Checking dash panel insert voltage supply 11/3
- Checking dash panel insert warning lamps 11/4
- Checking wiring 11/4

Equipment required for fault finding:

- *Hand multimeter V.A.G 1526 or V.A.G 1526 A*
- *Test lamp V.A.G 1527*
- *Test box V.A.G 1598*
- *Adapter V.A.G 1598/8*

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Calling up dash panel insert test mode

The electronic components and instruments in the dash panel insert must be installed to match the appropriate vehicle equipment. The electronic unit in each dash panel insert has an integrated test facility, which can be interrogated to check whether the insert fitted, is equipped with the correct electronic components and instruments to ensure that the vehicle specific input signals are processed properly and shown in the display. This test mode for the dash panel insert can be used for fault finding and should be interrogated in all cases of complaints concerning the functioning of the dash panel insert.

Calling up test mode:

- Switch ignition on
- Press trip recorder button
- Keep trip recorder button depressed and switch ignition off and then on again

The selected function number and data appears in speedometer display. By further operation of the trip recorder button the functions listed in the table can be called up one after the other.

Number	Function displayed	Engine codes					
		Manual gearbox: AEV		Manual gearbox: ADX AEA		Manual gearbox: AEF	
1	Country version	**	–	**	UK	**	UK
2	Distance impulse number	3956	–	3956	6365	3956	6365
3	Speedometer/rev. counter code	Only for production, not required for fault finding					
4	No. of cylinders (petrol engine)	4	–	4	4	–	–
	Ratio (Diesel engine)	–	–	–	–	2.25 : 1	2.25 : 1
5	Segment test	all segments visible					
6	Impulse from speedo sender	7 impulses are counted per wheel revolution and added to counter total. Display range from 0 to 9999					
7	RPM display	Momentary engine speed is displayed					
8	Programme version	Only for production, not required for fault finding					

Country versions:
** – All countries which are not listed separately

Distance impulse number:
If the indicated figure does not tally with the distance number in the table, the distance will be recorded incorrectly.
The distance impulse number is a constant, engine-specific value with which the distance impulses of the driven distance can be calculated.
Example: distance impulse number (from table) x driven distance = 3956 x 0.5 km = 1978 impulses

Switching off the ignition ends the test mode!

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Checking dash panel insert voltage supply

Note:

The socket designations in the test box V.A.G 1598 are identical with the contact designations on the dash panel insert.

Test prerequisites:

- Battery voltage OK.!
- Fuses S16 and S21 OK.!

Preparation for check:

- Remove dash panel insert ⇒ Electrical system, Repair group 90
- Connect test box V.A.G 1598 using adapter cable V.A.G 1598/8 to 28 pin socket, terminal 1 on dash panel insert and detached 28 pin connector of dash panel insert wiring loom
- Connect battery earth strap
- Set measuring range switch of hand multimeter to 20 V =

Check voltage supply terminal 30/ terminal 31

- Connect red probe (+) to test box socket 11
- Connect black probe (–) to test box socket 3

No voltage	approx. battery voltage
↓ Check wiring terminal 30/ terminal 31 to dash panel insert according to current flow diagram	↓

Check voltage supply terminal 30/ terminal 31b

- Connect red probe (+) to test box socket 11
- Connect black probe (–) to test box socket 5

No voltage	approx. battery voltage
↓ Check wiring terminal 31b to dash panel insert according to current flow diagram	↓

Check voltage supply terminal 15

- Connect red probe (+) to test box socket 13
- Connect black probe (–) to test box socket 3
- Switch ignition on

No voltage	approx. battery voltage
↓ Check wiring terminal 15 to dash panel insert according to current flow diagram	↓ Voltage supply OK.

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Checking warning lamps in dash panel insert

Test prerequisites:

- Voltage supply of dash panel insert OK. (checking ⇒ Page 11/3)

If one warning lamp in the dash panel insert does not work, first check the bulb concerned in dash panel insert and replace if necessary (⇒ Electrical system, Repair group 90).

If the bulb to be checked is in order, continue fault finding by checking the wiring!

Note:

The dash panel insert (manufactured by MOTOMETER) is partially equipped with LEDs instead of bulbs. Defective LEDs in these dash panel inserts cannot be replaced.
If a bulb is a LED version continue fault finding with check of wiring to dash panel insert.

Checking the wiring:

Note:

The socket designations in the test box V.A.G 1598 are identical with the contact designations on the dash panel insert.

Test prerequisites:

- Test lamp V.A.G 1527 checked and OK.!

Preparation for test:

- Remove dash panel insert ⇒ Electrical system, Repair group 90
- Connect test box V.A.G 1598 using adapter cable V.A.G 1598/8 to detached 28 pin connector of dash panel insert wiring loom. Do not connect dash panel insert to test box.
- Connect battery earth strap
- Set measuring range switch of hand multimeter to 20 V =

Test step	Item checked is wiring for:	Test conditions and additional operations:	Readings/test results:
1	Warning lamp for left turn signal (K65)	– Connect test lamp V.A.G 1527 to test box sockets 22 and 3 – Switch left turn signal on – Switch ignition on	Test lamp flashes
2	Warning lamp for right turn signal (K94)	– Connect test lamp V.A.G 1527 to test box sockets 24 and 3 – Switch right turn signal on – Switch ignition on	Test lamp flashes
3	Warning lamp for main beam (K1)	– Connect hand multimeter to test box sockets 25 and 3 – Switch main beam on:	Approx. battery voltage

Continued on next page!

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Test step	Item checked is wiring for:	Test conditions and additional operations:	Readings/test results:
4	Dash panel insert light bulbs (L10) and digital display light (L75)	– Connect hand multimeter to test box sockets 12 and 3. – Switch light on and operate instrument light regulator (E20), on lighting switch:	Approx. 2.0 Volt to battery voltage, depending on position of instrument light regulator (E20)
5	Coolant temperature/coolant shortage indicator warning lamp (K28)	– Connect hand multimeter to test box sockets 23 and 13. – Switch ignition on: – Pull 4 pin connector off coolant temperature sender (G2):	Approx. battery voltage Approx. 0 Volt
		– Connect hand multimeter to test box sockets 2 and 13. – Switch ignition on: – Pull 2 pin connector off coolant shortage indicator (G32): (Coolant shortage indicator sender not installed in all vehicles).	Approx. battery voltage Approx. 0 Volt
6	Oil pressure warning lamp (K3)	– Connect hand multimeter to test box sockets 9 and 13. – Switch ignition on: – Start engine:	Approx. battery voltage Approx. 0 Volt
7	Generator warning lamp (K2)	– Connect hand multimeter to test box sockets 16 and 3. – Switch ignition on:	Approx. 0 Volt
8	Glow period warning lamp (K29) (only Diesel vehicles)	– Connect hand multimeter to test box sockets 20 and 13. – Switch ignition on:	Approx. battery voltage until pre-glow temperature is reached (note door contact control!)
9	Brake system warning lamp (K118)	– Connect hand multimeter to test box sockets 18 and 11. – Pull hand brake: – Loosen hand brake:	Approx. battery voltage Approx. 0 Volt

Test result:

- If the test results/readings are correct in the test steps, the wiring to the dash panel insert is OK and the dash panel insert must be renewed.
- If the test results/readings are not in order, check the wiring to the dash panel insert according to valid current flow diagram.

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Checking central locking system

(without Safe function)

Notes:

- *If the vehicle is to be equipped with the single door opening function, the cable to chamber 8 must be separated on the pump with control unit (V69) 12 pin connector. The pump with control unit (V69) is located in the luggage compartment right behind the cover.*
- *If the front left central locking system actuator (F131) does not open or close, check whether the vacuum pump operates for more than 5 seconds and pumps again after a short period. If this is the case, a leak exists that must be eliminated first!*

Required for fault finding:

- *Hand multimeter V.A.G 1526 or V.A.G 1526 A*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*

Test prerequisites:

- Fuse No. 21 (15 A) OK.
- Connectors, 18 pin, in A pillars, correctly connected
- Central locking system pressure pipes correctly connected and OK.

Checking voltage supply terminals 30 and 31

- Disconnect 12 pin connector from pump with control unit (V69)
- Set hand multimeter V.A.G 1526 measuring range switch to 20V DC
- Connect red probe (+) to 12 pin connector, chamber 1
- Connect black probe (–) to 12 pin connector, chamber 3

No voltage present	Voltage approx. battery voltage
↓	↓

Check wiring terminal 30 and 31 according to current flow diagram

Check central locking switch (F59 or F114) in door lock (position "closed")

- Connect red probe (+) to 12 pin connector, chamber 7
- Connect black probe (–) to 12 pin connector 12, chamber 3
- Hold driver's side or passenger side door lock with ignition key in position "closed".

No voltage present	Voltage approx. battery voltage
↓	↓

Check wiring according to current flow diagram or central locking switch (F59 or F114) defective

A

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A

Check central locking switch (F59 or F114) in door lock (position "open")

- Connect red probe (+) to 12 pin connector, chamber 10
- Connect black probe (–) to 12 pin connector, chamber 3
- Hold driver's side or passenger's side door lock with ignition key in position "open"

No voltage present	Voltage approx. battery voltage

→ Check wiring according to current flow diagram or central locking switch (F59 or F114) defective

Check central locking actuator (F131) in position "Driver's door unlocked"

- Unlock driver's door
- Connect red probe (+) to 12 pin connector, chamber 4
- Connect black probe (–) to 12 pin connector, chamber 3

No voltage present	Voltage approx. battery voltage

→ Check wiring according to current flow diagram or central locking system front, left actuator (F131) defective

Check central locking system actuator (F131) in position "Driver's door locked"

- Lock driver's door
- Set hand multimeter V.A.G 1526 measuring range switch for continuity check
- Connect red probe (+) to 12 pin connector, chamber 4
- Connect black probe (–) to 12 pin connector, chamber 3

Horn does not sound	Horn sounds

→ Check wiring according to current flow diagram or central locking system front, left actuator (F131) defective

→ Replace pump with control unit for central locking (V69)

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Checking window lifter

Notes:

- *The fault finding programme can be used for the left and right window lifter!*
- *For 18 pin connector chamber allocation on lower left or right A pillar ⇒ see "Fitting locations"*

The following is required for fault finding:

- *Hand multimeter V.A.G 1526*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*
- *Workshop Manual – general body repairs*

Test prerequisites:

- Battery voltage OK!
- Window lifter thermo fuse (S43) OK!
- Fuse No. 14 (15 A), on relay plate OK!
- Window lifter mechanically OK!

Checking voltage supply terminals 30 and 31 to window lifter relay

- Pull window lifter relay (J51) off relay location above relay plate
- Switch on ignition
- Set hand multimeter V.A.G 1526 measuring range switch to 20 V DC
- Connect red probe (+) to chamber 6 on relay carrier
- Connect black probe (–) to chamber 4 on relay carrier

No voltage present	Voltage approx. battery voltage
↓ Check wiring according to current flow diagram	↓

Check voltage supply terminals 30 and 31 to window lifter switch (E40 or E41)

- Connect window lifter relay (J51) to corresponding relay location above relay plate
- Pull 6 pin connector off window lifter switch (E40 or E41)
- Connect red probe (+) to 6 pin connector, chamber 5
- Connect black probe (–) to 6 pin connector, chamber 4

No voltage present	Voltage approx. battery voltage
↓ Check wiring according to current flow diagram or renew window lifter relay (J51)	↓ **A**

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A

Checking voltage supply terminal 30 to window lifter switch (E40 or E41)	
– Connect red probe (+) to 6 pin connector, chamber 3 – Connect black probe (–) to 6 pin connector, chamber 4	
No voltage present	Voltage approx. battery voltage

Check wiring accordng to current flow diagram

Checking window lifter switch (E40 or E41)	
– Connect 6 pin connector to window lifter switch (E40 or E41) and engage – Disconnect 18 pin connector, on lower left or right A pillar – Connect red probe (+) to 18 pin connector (A pillar), chamber 15 – Connect black probe (–) to 18 pin connector (A pillar), chamber 14 – Carry out voltage measurements according to table:	
Window lifter switch (E40 or E41) in switch position:	Specification/measurement result:
Not operated	0 Volt
"Close window"	Approx. battery voltage
"Open window"	Approx. battery voltage
Specification not attained	Specification attained

Check wiring according to current flow diagram or renew window lifter switch (E40 or E41)

Check engine wiring loom to window lifter (in door) or renew window lifter motor (V14 bzw. V15)

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Checking heated driver's seat

Required for fault finding:

- *Test system V.A.G 1466*
- *Hand multimeter V.A.G 1526 A*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*

Test prerequisite:

- Fuse No..14 (15 A) OK!

Preparation for fault finding:

- Switch seat heating off.
- Pull heated driver's seat control unit (J131) with control number 59 out of relay socket under driver's seat.
- Insert test adapter V.A.G 1466/6 into relay socket.
- Connect V.A.G 1466 to test adapter.

Information on test procedure:

- Carry out test steps according to table.
- If specified value/test result is obtained, continue fault finding with next test step (test result OK).
- If specified value/test result is not obtained, locate and eliminate fault using table.
- Use valid current flow diagram to check wiring.
- Pull test wires out of V.A.G 1466 sockets after each test step.

If fault has not been eliminated after carrying out test steps 1 to 6, renew control unit for heated driver's seat (J131) !

After eliminating fault carry out functional check of seat heating.

Test table on next page!

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Test step:	1	2	3	4
To be checked:	Voltage supply (terminal15)	Switching driver's seat heating control switch (E94) on and off	Regulating function of driver's seat heating (E94) control	Driver's seat temperature sensor (G59)
Socket assignment V.A.G 1466				
red wire	from 8 to S+	from 5 to S+	———	from 8 to D+
black wire	from S– to L+	from S– to L+	———	from D– to 4
blue wire	from L– to 7	from L– to 7	———	———
Hand multimeter V.A.G 1526 A:	———	———	between 6 and 5	———
Additional work:	Switch on ignition	Switch driver's seat regulator (E94) on	Switch off ignition, set hand multimeter measuring range switch to 2 kΩ, Operate heated driver's seat (E94) switch regulator	Switch on ignition
Specified value/ test result:	Warning lamp (L) lights up	Warning lamp (L) lights up	Resistance values from 0 Ω (min.) to 550 Ω (max.)	LED (D) lights up

Possible fault causes for deviations from specified value/test result:

Wiring, relay plate/component or component/component or component/earth	D/9 to (J131), contact 8 or (J131), contact 7 to earth	D/9 to (E94), contact 4 or (E94), contact 2 to (J131), contact 5	(E94), contact 1 to (J131), contact 6	(J131), contact 4 to (G59) or (G59) to earth
or Heated driver's seat switch regulator (E94)	———	X	X	———
or Heated driver's seat (Z6) and heated driver's backrest (Z7)	———	———	———	———
or Driver's seat temperature sensor (G59)	———	———	———	X
or Relay plate	X	X	———	———

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5	6
Heated driver's seat (Z6) and heated driver's seat backrest (Z7) – Continuity test	Heated driver's seat (Z6) and heated driver's seat backrest (Z7) – Resistance test
from 8 to S+	———
from S– to L+	———
from L– to 2	———
———	between 7 and 2 (without V.A.G 1466)
Switch on ignition	Switch off ignition, Pull test adapter V.A.G 1466/6 off relay socket and connect hand multimeter straight to relay socket (use adapter set), Set hand multimeter measuring range switch to 200 Ω
Warning lamp (L) lights up	Resistance value approx. 2 Ω (cold heating element)

(J131), contact 2 to (Z6) or (Z6) to (Z7) or (Z7) to earth	(J131), contact 2 to (Z6) or (Z6) to (Z7) or (Z7) to earth
———	———
X	X
———	———
———	———

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Checking heated passenger seat

Required for fault finding:

- *Test system V.A.G 1466*
- *Hand multimeter V.A.G 1526 A*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*

Test prerequisite:

- Fuse No..14 (15 A) OK!

Preparation for fault finding:

- Switch seat heating off.
- Pull heated driver's seat control unit (J132) with control number 59 out of relay socket under passenger seat.
- Insert test adapter V.A.G 1466/6 into relay socket.
- Connect V.A.G 1466 to test adapter.

Information on test procedure:

- Carry out test steps according to table.
- If specified value/test result is obtained, continue fault finding with next test step (test result OK).
- If specified value/test result is not obtained, locate and eliminate fault using table.
- Use valid current flow diagram to check wiring.
- Pull test wires out of V.A.G 1466 sockets after each test step.

If fault has not been eliminated after carrying out test steps 1 to 6, renew control unit for heated passenger seat (J132) !

After eliminating fault carry out functional check of seat heating.

Test table on next page!

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Test step:	1	2	3	4
To be checked:	Voltage supply (terminal15)	Switching passenger seat heating control switch (E95) on and off	Regulating function of passenger seat heating control (E95)	Passenger seat temperature sensor (G60)
Socket assignment V.A.G 1466				
red wire	from 8 to S+	from 5 to S+	———	from 8 to D+
black wire	from S– to L+	from S– to L+	———	from D– to 4
blue wire	from L– to 7	from L– to 7	———	———
Hand multimeter V.A.G 1526 A:	———	———	between 6 and 5	———
Additional work:	Switch on ignition	Switch passenger seat regulator (E95) on	Switch off ignition, set hand multimeter measuring range switch to 2 kΩ, Operate heated passenger seat (E95) switch regulator	Switch on ignition
Specified value/ test result:	Warning lamp (L) lights up	Warning lamp (L) lights up	Resistance values from 0 Ω (min.) to 550 Ω (max.)	LED (D) lights up

Possible fault causes for deviations from specified value/test result:

Wiring, relay plate/component or component/component or component/earth	D/9 to (J132), contact 8 or (J132), contact 7 to earth	D/9 to (E95), contact 4 or (E95), contact 6 to (J132), contact 5	(E95), contact 1 to (J132), contact 6	(J132), contact 4 to (G60) or (G60) to earth
or Heated passenger switch regulator (E95)	———	X	X	———
or Heated passenger seat (Z8) and heated passenger seat backrest (Z9)	———	———	———	———
or passenger seat temperature sensor (G60)	———	———	———	X
or Relay plate	X	X	———	———

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5	6
Heated passenger seat (Z8) and heated passenger seat backrest (Z9) – Continuity test	Heated passenger seat (Z8) and heated passenger seat backrest (Z9) – Resistance test
from 8 to S+	———
from S– to L+	———
from L– to 2	———
———	between 7 and 2 (without V.A.G 1466)
Switch on ignition	Switch off ignition, Pull test adapter V.A.G 1466/6 off relay socket and connect hand multimeter straight to relay socket (use adapter set), Set hand multimeter measuring range switch to 200 Ω
Warning lamp (L) lights up	Resistance value approx. 2 Ω (cold heating element)

(J132), contact 2 to (Z8) or (Z8) to (Z9) or (Z9) to earth	(J132), contact 2 to (Z8) or (Z8) to (Z9) or (Z9) to earth
———	———
X	X
———	———
———	———

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Checking turn signal and hazard warning system

Required for fault finding:

- *Test system V.A.G 1466*
- *Valid current flow diagram*

Test prerequisite:

- Fuse No. 17 (10 A) OK!
- Turn signal bulbs OK.

Preparations for fault finding:

- Pull hazard warning light relay (J2) with control number 21 out of relay position 6.
- Insert test adapter V.A.G 1466/3 into relay position 6.
- Connect V.A.G 1466 to test adapter.

Information on test procedure:

- Carry out test steps according to table.
- If specified value/test result of test step is obtained, continue fault finding with next test step (test result OK).
- If specified value/test result of rest step is not obtained, locate and eliminate fault using table.
- Use valid current flow diagram to check wiring.
- Pull test wires out V.A.G 1466 sockets after each test step.

If fault has not been eliminated after carrying out test steps 1 to 7, renew hazard warning light relay (J2) !

After eliminating fault carry out functional check of turn signals and hazard warning light system.

Test table on next page!

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Test step:	1	2	3	4
To be checked:	Voltage supply (terminal 30)	Voltage supply (terminal15)	Turn signal switch (E2), in **left** position	Turn signal switch (E2), in **right** position
Socket assignment V.A.G 1466				
red wire	from 6 to S+	from 6 to S+	from 6 to 8	from 6 to 8
black wire	from S– to L+	from S– to L+	———	———
blue wire	from L– to 4	from L– to 4	———	———
Additional work:	Hazard warning light switch (E3) on, switch ignition off	Hazard warning light sitch (E3) off, switch ignition on	Turn signal switch (E2), in **left** position	Turn signal switch (E2), in **right** position
Specified value/ test result:	Warning lamp L lights up	Warning lamp L lights up	Turn signal bulbs (M5), (M6), (M18) light up	Turn signal bulbs (M7), (M8), (M19) light up

Possible fault causes for deviations from specified value/test result:

Wiring relay plate/component	J/4 to (E3) or J/8 to (E3)	H1/5 to (E3)	H2/8 to (E3) or H2/6 to (E2) or A1/2 to (M5) or A1/2 to (M18) or K/1 to (M6)	H2/4 to (E2) or A2/4 to (M7) or A2/4 to (M19) or K/7 to (M8)
or wiring component/earth	———	———	(M5) to earth or (M6) to earth or (M18) to earth	(M7) to earth or (M8) to earth or (M19) to earth
or Turn signal (E2)	———	———	X	X
or Warning light switch (E3)	X	X	———	———
or Warning lamp for hazard warning light (K6)	———	———	———	———
or Left turn signal warning lamp (K65)	———	———	———	———
or Right turn signal warning lamp (K94)	———	———	———	———
or Relay plate	X	———	X	X

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5	6	7
Hazard warning light system warningn lamp (K6)	Left turn signal warning lamp (K65)	Right turn signal warning lamp (K94)
———	from 6 to 8	from 6 to 8
———	———	———
———	———	———
Turn signal switch (E2) off, Hazard warning light switch (E3) on	Warning light switch (E3) off, turn signal switch (E2) in left position	Warning light switch (E3) off, turn signal switch (E2) in right position
Hazard warning light system warning lamp (K6) lights up	Warning lamp (K65) lights up	Warning lamp (K94) lights up

———	H2/6 to (K65)	H2/4 to (K94)
———	Control unit with display unit in dash panel insert (J285) to earth	Control unit with display unit in dash panel insert (J285) to earth
———	———	———
X	———	———
X	———	———
———	X	———
———	———	X
———	X	X

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Checking headlight washer system

Equipment required for fault finding:

- *Test system V.A.G 1466*
- *Hand multimeter V.A.G 1526 A*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*

Test prerequisite:

- Fuse No. 5 (15 A) OK!

Preparation or fault finding:

- Pull headlight washer system relay (J39) with control number 33 out of relay position 7.

Notes on test sequence:

- Carry out test according to table.
- If specified value/test result of test step is attained, proceed with next test step (test result OK).
- If specified value/test result of test step is not attained, locate fault and using table and eliminate.
- Use valid current flow diagram to check wiring.
- Pull test wires out V.A.G 1466 sockets after each test step.

If the fault is not eliminated after carrying out test steps 1 to 4, renew the relay for headlight washer system (J39) !

When fault has been eliminated carry out functional check of headlight washer system.

Test table on next page!

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Test step:	1	2	3	4
Item checked:	Lighting switch (E1) terminal 56 voltage supply	Voltage supply (terminal 30)	Windscreen wiper switch (E22)	Headlight washer system pump (V11)
Socket assignment V.A.G 1466				
red wire	———	from 8 to S+	from 4 to S+	from 8 to 2
black wire	———	from S– to L+	from S– to L+	———
blue wire	———	from L– to 6	from L– to 6	———
Hand multimeter V.A.G 1526 A:	between 1 and 3 (without V.A.G 1466)	———	———	———
Additional work:	Set hand multimeter measuring range switch to 20 V DC and connect to relay position 7 (use adapter set), Switch ignition on, lighting switch (E1) on main or dip beam	Pull hand multimeter off relay position 7, attach test adapter V.A.G 1466/3 to relay position 7 and connect to tester V.A.G 1466	Operate wiper switch (E22)	**Attention! Do not bridge sockets for longer than 2 seconds!**
Specified test results:	approx. battery voltage	Warning lamp (L) lights up	Warning lamp (L) lights up	(V11) runs

Possible fault causes if test results are not as specified:

Wiring, relay plate/component	B/3 to (E1) or B/4 to earth	30 to (TV2) or B/5 to (TV2)	H1/8 to (E22) or B/2 to B/1 or J/7 to (E22)	B/6 to (V11) or (V11) to earth
or Lighting switch (E1)	X	———	———	———
or Windscreen wiper switch (E22)	———	———	X	———
or Headlight washer pump (V11)	———	———	———	X
or Relay plate	X	X	X	X

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Checking fabric sunroof

Note:

If the vehicle is equipped with electric window lifters the fabric sunroof relay (J72) is also used to control the electric window lifters.

Equipment required for fault finding:

- *Hand multimeter V.A.G 1526*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*

Test prerequisites:

- Battery voltage OK!
- Fabric sunroof thermo fuse (S83) OK!
- Fuse No. 4 (15 A), on relay plate, OK!
- Fabric sunroof mechanically OK!

Check voltage supply terminal 30 and terminal 31 to fabric sunroof relay (J72)

- Pull fabric sunroof relay (J72) off relay position above relay plate
- Switch ignition on
- Set hand multimeter V.A.G 1526 measuring range switch to 20 V DC
- Connect red probe (+) to relay carrier chamber 6
- Connect black probe (–) to relay carrier chamber 4

No voltage present	Voltage approx. battery voltage
↓ Check wiring according to current flow diagram	↓

Check voltage supply terminal 30 and terminal 31 to fabric sunroof switch (E142)

- Fit fabric sunroof relay (J72) to relevant relay position above relay plate
- Pull 6 pin connector off fabric sunroof switch (E142)
- Connect red probe (+) to 6 pin connector, chamber 5
- Connect black probe (–) to 6 pin connector, chamber 4

No voltage present	Voltage approx. battery voltage
↓ Check wiring according to current flow diagram or renew fabric sunroof relay (J72)	↓ A

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A

Check voltage supply terminal 30 to fabric sunroof switch (E142)	
– Connect red probe (+) to 6 pin connector, chamber 3 – Connect black probe (–) to 6 pin connector, chamber 4	
No voltage present	Voltage approx. battery voltage

Check wiring according to current flow diagram

Check fabric sunroof switch (E142)	
– Fit 6 pin connector to fabric sunroof switch (E142) – Pull 2 pin connector off fabric sunroof motor (V86) – Connect red probe (+) to 2 pin connector, chamber 2 – Connect black probe (–) to 2 pin connector, chamber 1 – Carry out voltage measurement according to table:	
Fabric sunroof switch (E142) in position:	Specified value/test result:
not operated	0 V
Close	approx. battery voltage
Open	approx. battery voltage
Specified value not attained	Specified value attained

Check wiring according to current flow diagram or renew fabric sunroof switch (E142)

Renew fabric sunroof motor (V86)

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Checking glow plug system (engine code AEF), from November 1994

Notes:

- *The automatic glow period control unit (J179) is equipped with a fault memory. In this fault finding programme checking the glow plug system is carried out without interrogating fault memory.*
- *On vehicles from November 1995 the fault finding is to be carried out with interrogation of fault memory.*
  ⇒ Workshop Manual, Diese injection and glow plug system, Repair group 01

Contents:

- Description of glow plug system with door contact activation 19/2
- Checking glow plug system 19/3

Test prerequisites

- Glow plug relay (J 52) OK!
- Glow plug fuse (S 125) OK!
- Glow plugs OK.
- Alternator (C), terminal W, OK!
- Fuse No. 15 on relay plate OK!

The following equipment is required for fault finding:

- *Hand multimeter V.A.G 1526*
- *Adapter set V.A.G 1594 A*
- *Valid current flow diagram*

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Description of glow plug system with door contact activation

Pre-glow period

The pre-glow period is regulated according to engine temperature. The temperature value is supplied by the engine temperature sender (G 27) in coolant circuit.

- At coolant temperatures above 65°C a pre-glow period does not take place - engine can be started immediately.
- At coolant temperatures above 0°C a single pre-glow period takes place.
- At coolant temperatures below 0°C two pre-glow periods may take place.

The glow plug system is activated by the opening and subsequent closing of the driver's door. This closes the circuit for the glow plugs via the relay (J 52).

The glow period is not indicated.

If the ignition is switched on before the end of the glow period, the glow plug warning lamp (K 29) in dash panel insert comes on for the remaining glow period.

Repeat inhibitor

When glow plugs have been activated once or twice by the door contacts, a repeat inhibitor de-activates the door contacts. This is to prevent unintentional discharging of the battery by repeated glow plug operation.

A glow period can then only be initiated by the ignition switch.

The repeat inhibitor action is cancelled:

- when engine has been started and coolant temperature exceeds 65°C or
- engine is switched off with ignition switch (ignition off).

Glow plug activation by door contacts at engine temperatures below 65°C is again possible.

Readiness period

As soon as the glow period warning lamp (K 29) goes out, the readiness period starts. The current circuit for the glow plugs remains closed during this time.

The start readiness is divided into two different periods:

- 10 seconds when glow plug system is activated by the ignition switch
- 20 seconds when glow plug system is activated by door contacts.

During this readiness period engine starting is assured. If engine is not started during this period, the control unit terminates the glow process when appropriate time expires, the glow plug current circuit is opened.

The engine start signal is supplied from starter terminal 50 and processed by the glow period control unit (J 179).

After-glow period:

After engine has started (terminal 50 on/off) the after-glow period begins, the current circuit for the glow plugs remains closed.

The maximum after-glow period is 180 seconds. If an engine temperature of 65°C is reached before this time has expired, the after-glow period ends prematurely.

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Checking glow plug system

Checking engine temperature sender (G27)

The engine temperature sender (G27) check must be carried out according to coolant temperature:

Specification table:

Temperature:	0°C	20°C	60°C	90°C	120°C
Sender (G27) specification	2450 Ω ±15Ω	1040Ω ±15Ω	245Ω ±10Ω	102Ω ±6Ω	48Ω ±6Ω

Checking resistance value of engine temperature sender (G27)

- Switch off ignition and all electrical consumers
- Disconnect 4 pin connector from engine speed sender (G27)
- Set hand multimeter measuring range switch to 20 kΩ
- Connect red probe (+) to engine temperature sender (G27), contact 1
- Connect black probe (–) to engine temperature sender (G27), contact 3
- Compare indicated sender resistance value with specification according to table

Measuring value not OK → Renew engine temperature sender (G27)

Measuring value OK ↓

Checking wiring from automatic glow period control unit (J179) to engine temperature sender (G27)

- Disconnect automatic glow period control unit (J179) from additional relay carrier above relay plate
- Set hand multimeter measuring range switch to ⊣◀ / ♪
- Connect red probe (+) to relay socket, chamber 3
- Connect black probe (–) to engine temperature sender (G27) 4 pin connector, chamber 3

Signal does not sound → Check wiring from automatic glow period control unit (J179) to engine temperature sender (G27) according to current flow diagram

Signal sounds ↓

Checking voltage supply terminals 30 and 31

- Set hand multimeter measuring range switch to 20 V =
- Connect red probe (+) to relay socket, chamber 9
- Connect black probe (–) to relay socket, chamber 8

Voltage not OK → Check wiring terminals 30 or 31 according to current flow diagram

Voltage OK → A

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A

Checking voltage supply, terminal 15

- Connect red probe (+) to relay socket, chamber 4
- Connect black probe (–) to relay socket, chamber 8
- Swithc ignition on

Voltage not OK	Voltage OK
Check wiring terminal 15 according to current flow diagram	

Check voltage supply, terminal 50

- Connect red probe (+) to relay socket, chamber 12
- Connect black probe (–) to relay socket, chamber 8
- Ignition/starter switch in position "Start engine"

Voltage not OK	Voltage OK
Check wiring terminal 50 according to current flow diagram	

Check voltage supply for glow plug relay (J52)

- Connect red probe (+) to fuse holder for glow plug fuse (S125)
- Connect black probe (–) to earth
- Bridge chambers 8 and 10 on relay socket (use adapter set V.A.G 1594 A)

Glow plug relay (J52) not switching ⇒ Voltage not OK	Glow plug relay (J52) switching ⇒ Voltage OK
Check wiring from automatic glow period control unit (J179) to glow plug relay (J52) according to current flow diagram	

Checking glow period warning lamp (K29)

- Bridge chambers 8 and 11 of relay socket (use adapter set V.A.G 1594 A)

Glow period warning lamp (K29) does not light up	Glow period warning lamp (K29) lights up
Check wiring according to current flow diagram or check glow period warning lamp (K29) ⇒ see Workshop Manual Electrical System, Repair group 90	B

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B

Checking door contact switch, front left (F2)	
– Switch ignition off – Set hand multimeter measuring range switch to ⊣◀ / ♪ – Connect red probe (+) to relay socket, chamber 7 – Connect black probe (–) to relay socket, chamber 8 – Operate door contact switch, front left (F2)	
Signal sounds when driver's door is open, it does not sound when driver's door is closed	
Function not OK	Function OK

Function not OK → Check wiring according to current flow diagram or check door contact switch (F 2)

Function OK →

Checking wiring to alternator (C)	
– Switch ignition off – Connect red probe (+) to relay socket, chamber 1 – Connect black probe (–) to alternator, terminal W	
Horn does not sound	Horn sounds

Horn does not sound → Check wiring according to current flow diagram

Horn sounds → Renew automatic glow period control unit (J 179)

END

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Checking dash panel insert

Contents:

- Calling up dash panel insert test mode 20/2
- Checking dash panel insert voltage supply 20/3
- Checking dash panel insert warning lamps 20/4
- Checking wiring 20/4

Equipment required for fault finding:

- *Hand multimeter V.A.G 1526 or V.A.G 1526 A*
- *Test lamp V.A.G 1527*
- *Test box V.A.G 1598*
- *Adapter V.A.G 1598/8*

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Calling up dash panel insert test mode

The electronic components and instruments in the dash panel insert must be installed to match the appropriate vehicle equipment. The electronic unit in each dash panel insert has an integrated test facility, which can be interrogated to check whether the insert fitted, is equipped with the correct electronic components and instruments to ensure that the vehicle specific input signals are processed properly and shown in the display. This test mode for the dash panel insert can be used for fault finding and should be interrogated in all cases of complaints concerning the functioning of the dash panel insert.

Calling up test mode:

- Switch ignition on
- Press trip recorder button
- Keep trip recorder button depressed and switch ignition off and then on again

The selected function number and then the data appears in speedometer display for approx. 1 second. By further operation of the trip recorder button the functions listed in the table can be called up one after the other.

Number	Function displayed	Engine codes							
		Manual and automatic gearbox: AEV AEX AEE		Automatic gearbox: AEE		Manual and automatic gearbox: AEX AEE		Manual gearbox: AEF	
	Country version	RoW	UK	Japan	–	Australia	–	RdW	UK
1	Distance impulse No.	3956	6365	3956	–	3956	–	3956	6365
2	Clock display mode	1	3	1	–	1	–	1	3
3	Speedometer/rev. counter code	Only for production, not required for fault finding							
4	No. of cylinders (petrol engine)	4	4	4	–	4	–	–	–
	Radio (Diesel engine)	–	–	–	–	–	–	2.69 : 1	2.69 : 1
5	Segment test	all segments visible							
6	Impulse from speed sender	7 impulses are counted per wheel revolution and added to counter total – Display range from 0 to 9999							
7	RPM display	Momentary engine speed is displayed							
8	Programme version	Only for production, not required for fault finding							

Country versions:
RoW – All countries which are not listed separately ("Rest of the world")
UK – Great Britain and mainly countries that drive on the left

Distance impulse number:

If the indicated figure does not tally with the distance number in the table, the distance will be recorded incorrectly.

The distance impulse number is a constant, engine-specific value with which the distance impulses of the driven distance can be calculated.

Example: distance impulse number (from table) x driven distance = 3956 x 0.5 km = 1978 impulses

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Checking dash panel insert voltage supply

Note:

The socket designations in the test box V.A.G 1598 are identical with the contact designations on the dash panel insert.

Test prerequisites:

- Battery voltage OK.!
- Fuses S16 and S21 OK.!

Preparation for check:

- Remove dash panel insert ⇒ Electrical system, Repair group 90
- Connect test box V.A.G 1598 using adapter cable V.A.G 1598/8 to 28 pin socket, terminal 1 on dash panel insert and detached 28 pin connector of dash panel insert wiring loom
- Connect battery earth strap
- Set measuring range switch of hand multimeter to 20 V =

Check voltage supply terminal 30/ terminal 31

- Connect red probe (+) to test box socket 11
- Connect black probe (–) to test box socket 3

No voltage	approx. battery voltage
↓ Check wiring terminal 30/ terminal 31 to dash panel insert according to current flow diagram	↓

Check voltage supply terminal 30/ terminal 31b

- Connect red probe (+) to test box socket 11
- Connect black probe (–) to test box socket 5

No voltage	approx. battery voltage
↓ Check wiring terminal 31b to dash panel insert according to current flow diagram	↓

Check voltage supply terminal 15

- Connect red probe (+) to test box socket 13
- Connect black probe (–) to test box socket 3
- Switch ignition on

No voltage	approx. battery voltage
↓ Check wiring terminal 15 to dash panel insert according to current flow diagram	↓ Voltage supply OK.

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Checking warning lamps in dash panel insert

Test prerequisites:

- Voltage supply of dash panel insert OK. (checking ⇒ Page 11/3)

If one warning lamp in the dash panel insert does not work, first check the bulb concerned in dash panel insert and replace if necessary (⇒ Electrical system, Repair group 90).

If the bulb to be checked is in order, continue fault finding by checking the wiring!

Note:

The dash panel insert (manufactured by MOTOMETER) is partially equipped with LEDs instead of bulbs. Defective LEDs in these dash panel inserts cannot be replaced.
If a bulb is a LED version continue fault finding with check of wiring to dash panel insert.

Checking the wiring:

Note:

The socket designations in the test box V.A.G 1598 are identical with the contact designations on the dash panel insert.

Test prerequisites:

- Test lamp V.A.G 1527 checked and OK.!

Preparation for test:

- Remove dash panel insert ⇒ Electrical system, Repair group 90
- Connect test box V.A.G 1598 using adapter cable V.A.G 1598/8 to detached 28 pin connector of dash panel insert wiring loom. Do not connect dash panel insert to test box.
- Connect battery earth strap
- Set measuring range switch of hand multimeter to 20 V =

Test step	Item checked is wiring for:	Test conditions and additional operations:	Readings/test results:
1	Warning lamp for left turn signal (K65)	– Connect test lamp V.A.G 1527 to test box sockets 22 and 3 – Switch left turn signal on – Switch ignition on	Test lamp flashes
2	Warning lamp for right turn signal (K94)	– Connect test lamp V.A.G 1527 to test box sockets 24 and 3 – Switch right turn signal on – Switch ignition on	Test lamp flashes
3	Warning lamp for main beam (K1)	– Connect hand multimeter to test box sockets 25 and 3 – Switch main beam on:	Approx. battery voltage

Continued on next page!

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Test step	Item checked is wiring for:	Test conditions and additional operations:	Readings/test results:
4	Dash panel insert light bulbs (L10) and digital display light (L75)	– Connect hand multimeter to test box sockets 12 and 3. – Switch light on and operate instrument light regulator (E20), on lighting switch:	Approx. 2.0 Volt to battery voltage, depending on position of instrument light regulator (E20)
5	Coolant temperature/coolant shortage indicator warning lamp (K28)	– Connect hand multimeter to test box sockets 23 and 13. – Switch ignition on: – Pull 4 pin connector off coolant temperature sender (G2):	Approx. battery voltage Approx. 0 Volt
		– Connect hand multimeter to test box sockets 2 and 13. – Switch ignition on: – Pull 2 pin connector off coolant shortage indicator (G32): (Coolant shortage indicator sender not installed in all vehicles).	Approx. battery voltage Approx. 0 Volt
6	Oil pressure warning lamp (K3)	– Connect hand multimeter to test box sockets 9 and 13. – Switch ignition on: – Start engine:	Approx. battery voltage Approx. 0 Volt
7	Generator warning lamp (K2)	– Connect hand multimeter to test box sockets 16 and 3. – Switch ignition on:	Approx. 0 Volt
8	Glow period warning lamp (K29) (only Diesel vehicles)	– Connect hand multimeter to test box sockets 20 and 13. – Switch ignition on:	Approx. battery voltage until pre-glow temperature is reached (note door contact control!)
9	Brake system warning lamp (K118)	– Connect hand multimeter to test box sockets 18 and 11. – Pull hand brake: – Loosen hand brake:	Approx. battery voltage Approx. 0 Volt

Test result:

- If the test results/readings are correct in the test steps, the wiring to the dash panel insert is OK and the dash panel insert must be renewed.
- If the test results/readings are not in order, check the wiring to the dash panel insert according to valid current flow diagram.

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